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OF THE

ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

VOLUME III, 1892.

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AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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NOTES FROM NEW WINDSOR.

EMILY L. MORTON, New Windsor, N. Y.

ISA TEXTULA H.-S.

Reading the last number of ENTOMOLOGICAL NEWS (October) I noticed a short paragraph by Mr. Dyar on the genus *Isa*. Dr. A. S. Packard having identified a small *Limacodes* for me as *Isa textula*, and as the moth seems but little known, I have written a short account of the species, which I have raised from the eggs and back again through all its changes.

Isa textula is a small moth nine-tenths of an inch in expanse, of a very satiny texture, with long fringes to all the wings, the color a pale wood color as light as white pine; on some specimens there is a faint indication of a t. p. and t. a. line broken and extending only half across the forewings, but in many specimens this is entirely wanting. The eggs are laid singly, scattered about, and, like most of the *Limacodes* eggs which I have seen, are without form, looking like tiny drops of gelatine, or coagulated dew, invisible to the naked eye on the leaves, but on white paper having a slightly yellowish tinge, increasing with the growth of the larva within, but nothing more than a tiny, irregular shining speck on the leaves, and hatch in from eight to ten days.

The young larva when first hatched are also almost invisible, and, even after the first moult, look only like a small, colorless aphis on the leaf. The third moult shows a lilac mark in the centre of the dorsum increasing with the growth, until the last moult, when it resembles a rude maltese cross, of a pinkish or purplish brown, surrounded by a yellow border with a central square dot on the elipse-shaped pea-green larva.

The food-plants are the chestnuts, both horse and *Castania visca*, English and wild cherry, oak, basswood, and probably other trees, as most of the *Limacodes* are very general feeders. On wild cherry the larvæ take from eight to ten weeks to come to their growth; on chestnut a somewhat shorter period, but it depends on what may be the heat or cold more than the food-plant. I have usually fed the larva on wild cherry, as it is not infested with aphides, and during the long period of growth from egg to cocoon it does not require so much time and attention to keep the food-plant clean and sweet. The larvæ spin their cocoons about September 5th to 20th, a small, roundish, brown, pod-like cocoon, with the usual lid of the *Limacodes*, and the moths hatch the following season from the 8th to the 25th of July, almost always in the afternoon, and remain hanging from the lid or side of the cage, until between half past eight or nine o'clock in the evening, when the males begin to seek their mates. *Isa textula* hangs with its abdomen curled over its back after the manner of *Pterophora diversilineata*.

Reading recently a number of the English monthly, "The Entomologist's Record," I was greatly interested in an account of "assembling," and never having seen the process described before in any of our journals, I will describe my method, which I hope may prove of interest, as the habits of the *Limacodes* seem to be so little known. I use a large gauze-wire cage about 20 x 15 inches, and 18 or 20 inches high, a door in the front and back, and painted a dark red or green, and place the newly-hatched female *textula* therein. About 8.30 P.M. I station myself by the cage with a glass tumbler and piece of pasteboard and watch for the males to come. If the *Limacodes* is a common one, like *E. stimulea*, *P. fraterna*, or *S. inornata*, there will usually be a score or more of males suddenly appearing, fluttering about the cage, always settling on the top or side, where the ♀ is resting, hustling each other with their wings and endeavoring to reach the coveted ♀ inside the gauze. Now, if you want specimens, you catch them by putting the tumbler over them slipping the pasteboard under and transfer them to the cyanide bottle, but if you want fertile eggs you shake the males from the glass into the cage by the door opposite the lightest part of the horizon. After the female has once paired no more males will be attracted, so you must make up your mind beforehand whether it is specimens or eggs you most desire. I never use a light if breeding is my object, as there are scarcely any moths that will mate where a light is used; this is the reason the cage is painted a dark color, as you can see even in a very dim light the pale colored wings of the tiny males as they flutter around and over the dark gauze. *Isa textula* is a rare moth here, and I have rarely seen more than three males attracted in one evening; a dark, still, warm evening is always better for assembling, but even if it blows quite freshly some of the *Limacodes* will be attracted provided your cage is a little sheltered by trees or shrubbery, on the side from which the wind is coming. With some of the Bombycidæ and Sphingidæ, you may keep your cage in the house, in an open window, but I have never had any success with the *Limacodes* unless the cage was in an open space away from the house. I do not see how *Sisyrosea inornata*, however small, could ever be mistaken for *Isa textula*, being a very differently constructed *Limacodes*, a very much slenderer and lighter built insect, the thorax only one-tenth of an inch across while in *inornata* it measures half as much again, and the abdomen of *inornata* is fully twice the size of that of *textula*. I think it probable *I. textula* has been confounded with *Limacodes flexuosa*, but Dr. Packard has also identified this for me, and my specimens are darker colored with shorter fringes, narrower wings, the primaries more produced at the apex, especially in the ♀. The larva of *S. inornata*, Dr. Packard says in his "Forest Insects," was first described in the Harris Correspondence; it is one of the most beautiful of the *Limacodes*, but though I have repeatedly had the eggs from captive females, I have never yet succeeded in rearing more than two or three larvæ back again to the pupa. I, however, know its whole history, and will some day write it out for the readers of ENTOMOLOGICAL NEWS. The larva bears not the slightest resemblance to that of *Isa textula*.

Note on the Larva of Pachylia ficus (L.)

By T. D. A. COCKERELL, Kingston, Jamaica.

Pachylia ficus (Linn.)—Length about 80 mm. Head shiny jet-black, except the mouth parts, which are pale greenish. Thoracic shield dull black; the short caudal horn and the anal plates are black. Spiracles blackish. Body: back dull red, sides and under part dull pale bluish green, the two colors sharply defined; with a pale red longitudinal line near the lower edge of the red color on each side. On each of the last eight segments is an obscure narrow whitish oblique line on the green sides, crossing the spiracles. Legs pale bluish green, like the underside; sides of body wrinkled.

Food-plant, *Ficus* sp.

Described from a mature specimen about to pupate, found in Kingston, July 21, 1891. The moth emerged August 13th. Another mature larva, also found in Kingston, was brought to me by Anna Ashburn on the 2d of September.

The larva of this species is glaucous-green, whitish above, with a narrow yellow stripe on each side; until shortly before it changes to a pupa, when it assumes the very different coloration described above. This change of color is almost certainly protective, the red back being less conspicuous than whitish or green, as the larva crawls about in search of a suitable spot to pupate in.

In Weismann's "Studies in the Theory of Descent," p. 232, there is a foot-note by Prof. Meldola, in which this change is described from Burmeister. This account does not quite agree with the Jamaica larva, and if in South America the larva really changes after the third stage, and lives on the tree and feeds after assuming the red coloration, it apparently affords an instance in which a phase of color has arisen as protective at larval maturity, and has become so strong in the organization of the insect as to appear in some districts earlier in the life of the larva than is actually of use. It would be a curious case if it could be shown that this character had first appeared as useful, and had at length become injurious by reason of its excessive development! However, it is not so in Jamaica, and if the account of Burmeister's larva is correct, it may still be that there are some special conditions of environment in the district where it was found, that render the red useful not only at pupating time, but also on the tree. This might be the case, for example, if it fed on a tree whose leaves turned red at a certain time.

PREPARATORY STAGES OF ICHTHYURA BIFIRIA Hy. Edw.

By Harrison G. Dyar, New York.

Egg.—Hemispherical or slightly conoidal, the base flat, but rounded at its edges; smooth under a lens, but under the microscope, covered with numerous, crowded, shallow depressions, which form by their edges narrow, roundedly, hexagonal reticulations. The color is dark gray before the egg hatches. Diameter 7 mm.

First stage.—Head shining black, labrum pale; width 35 mm. Body slightly flattened, whitish, cervical shield black; a few pale hairs; joints 5 and 12 are slightly enlarged dorsally; the lateral region, and joints 5, 7 and 12 dorsally are wine-red. Thoracic feet large, pale; the abdominal normal, all used in walking. Length 2.5 mm. The larva hatches by eating a round hole in the vertex of the egg, leaving the rest of the shell untouched. It lives, singly, in a shelter constructed by spinning two or more leaves together.

Second stage.—Head black and shining, the central suture deep; width 6.5 mm. Body flattened, pale whitish yellow, with narrow triplicate dorsal, and very broad lateral bands of dull wine color, as are also the humps on joints 5 and 12. Cervical shield and anal plate black; venter dull greenish; legs black.

Third stage.—Head flat in front, slightly bilobed, brownish black, but paler centrally around the clypeus; a few dark hairs; width 1.4 mm. Body pale yellow, joints 5 and 12 a trifle dorsal line, broad lateral and confused triple subventral lines, all dark brown. Cervical shield and anal plate blackish; scattered pale hairs arise from smooth, low, round tubercles, concolorous with the markings.

Fourth stage.—Head pale brown, shaded with black in front; jaws and ocelli black; a white shade on each side of the clypeus; width 2.6 mm. Body as before, but the lateral band is faintly divided by a double yellowish line, and joint 13 is nearly all yellowish. The round, smooth, piliferous tubercles are distinctly yellow in the yellow markings. Cervical shield small, bisected, pale brown; anal plate not distinguishable. Hair whitish, both from body and head. As the stage advances the colors become quite pale, and the appearance is much changed; humps on joints 5 and 12 very slight, dark purple. Ground color whitish gray, becoming pale purple, a triplicate dark purple dorsal line, the central one most distinct, the others broader and diffuse. All these lines are more or less broken into mottlings. A similar stigmatal line with some purple mottlings subventrally; venter paler; spiracles black. The piliferous tubercles are normal in arrangement, much as the warts in *Halesidota*, row (4) small, posteriorly to the spiracles, row (7) apparently absent. The head is held out flat, as in *Gluphisia*.

Cocoon.—Composed of several leaves spun together and lined with threads.

Pupa.—Nearly cylindrical, flattened a little ventrally, gradually tapering posteriorly, but of nearly even width, no part enlarged; last abdominal segments rounded, cremaster long and slender, terminating in a knob that, under the microscope, is seen to consist of a row of radiating, strongly recurved hooks, which hold firmly to the silk of the cocoon. Color dark red-brown, the thorax and cases nearly black. Length 11 mm.; width 3.5 mm.

Food-plant.—Willow (*Salix*).

Larvæ from Yosemite Valley, Cal. These larvæ had but four stages, and there are two broods in a year.

Ichthyura bifiria, as well as *I. brucei* Hy. Edw., must come very near to *I. vau* Fitch, if they are not merely western forms of it, but the larva of *I. vau* is still unknown, so that it is impossible to compare the early stages.

A NOTE ON CYCHRUS.

By H. F. WICKHAM, Iowa City, Iowa.

"Arizona has not, to my knowledge, furnished even a specimen of Cychride;" (Dr. Horn, in Notes on the Biologia Centrali-Americana, monthly Proc. of Ent. Sec. A. N. S. June, 1886, p. ix.) During the Summer of 1890, while in the Pinal Mountains, about eighty miles from Tucson, my friend and companion, Dr. E. D. Peters, took four or five specimens of a *Cychrus* (*Scaphinotus*), which I thought to be *Snowii* Lec., near a little spring. Later in the day a search by myself resulted in the finding of another specimen.

Our knowledge of the distribution of *Cychrus* has been wonderfully extended during the thirteen years that had elapsed since the publication by Dr. Horn of his Synopsis in the "Transactions of the American Entomological Society." At that time but three species of the division *Sphæroderus* were known, all from the Atlantic region, none of them ranging farther south than North Carolina. Since then the labors of Mr. Ricksecker have resulted in the discovery of two more species (*relictus* and *regularis*) from the Spokane River region of Washington, both of these having been also taken by myself at Cœur d'Alene, Idaho, in company with the third western species only lately described by Dr. Horn ("Ent. Am." vol. vi, p. 71) as *Merkelii*. This shows *Sphæroderus* to be northern rather than northeastern in its distribution, an equal number of species having been found on each side of the continent, none, however, being southern forms.

Scaphinotus, as is shown by the first paragraph, extends into Arizona besides covering in its distribution the region assigned to it by Dr. Horn, in his paper cited, from New York south to North Carolina and thence west to Colorado a range afterwards extended some distance southwards by the discovery of *C.* (*Scaphinotus*) *Snowii* in New Mexico.

Doubtless, the division *Pemphus* will remain characteristic of the north Pacific coast fauna, though *Brennus* supposed, until lately, to be confined to the coast fauna proper, has been shown by me (ENT. NEWS, vol. i, p. 33) to inhabit parts of Montana. The species recorded, *C. marginatus*, has heretofore been reported only from the stretch of coast from Oregon to Alaska, and its occurrence in Montana is of great interest, adding, as it does, another species to those common to the great central chain of mountains and the far north. During the glacial epoch, or just following it, this species probably inhabited the stretch of country from the Rockies to the coast, but the gradual northward retreat of the face of the glaciated area so changed the climate of this intervening region that *marginatus* was unable to retain its place. The Montana form already shows some minor differences from those found on the coast, and only time seems needed to differentiate it as a distinct species.

Until the discovery of *C. Rickseckeri*, the species of *Cychrus* proper were limited in our fauna to two strictly Pacific forms, *angulatus* and *tuberculatus*, and one from Utah, *C. Hemphillii;* but the first-mentioned insect is reported by Mr. Ricksecker, in a letter to me, to occur as far east as Clark's Ford, Mont., though

I believe the centre of its distribution to be the Cœur d'Alene district of Idaho, where I took it on my visit in 1889. *C. tuberculatus*, reported from Vancouver Island, occurs also in the mainland at Portland, Oreg., and Tacoma, Wash., but is still rare.

A perusal of these lines will show that in this genus every one of the divisions, except *Pemphus*, which contains but a single species, has been found to have a distribution much wider than that known to science when last written up, and I await further developments with a great deal of interest. Cannot some of the readers of ENT. NEWS furnish us with more notes on geographical distribution? Too little attention seems to have been paid this part of our science, and it is something in which every one can help.

Second Additions and Corrections to the list of Dragonflies (Odonata) of Manchester, Kennebec County, Maine.

BY MISS MATTIE WADSWORTH.

(See ENTOMOLOGICAL NEWS, vol. i, pp. 36, 55, and vol. ii, p. 11.)

5*a*. Amphiagrion saucium Burm.

1891, June 24, one ♀ in road.

6*c*. Enallagma cyathigerum Charp. race annexum Hag.

1891, June 16, one ♂ in meadow.

6*d*. Enallagma exsulans Hag.

1891, June 26, one ♂ near Lake Cobbosseecontee.

6*e*. Nehalennia irene Hag.

1891, June 9, one ♀ in road, near meadow; June 15, three ♀♀ in woods; June 19, one ♀ in woods.

24*a*. Macromia illinoiensis Walsh.

1891, July 10, one ♀ near brook.

32. This species called "**Cordulia cynosura variety**," in vol. ii, p. 11, is **C. (Tetragoneuria) spinigera** Selys.

All taken in 1891 have been identified, as all others have been, by Mr. Philip P. Calvert, of Philadelphia.

During the seasons of 1890 and 1891, additional specimens have been taken of several species noted as quite rare in the preceding lists. These are mentioned below.

6*a*. Enallagma ebrium Hag.

1891, June 16, two ♂♂ in meadow.

6*b*. Enallagma civile Hag.

1891, June 26, two ♂♂, one ♀ near Lake Cobbosseecontee.

13. Æschna (Basiaeschna) janata Say.

1890, June 21, one ♂ taken near brook. 1891, June 5 to 15, seven ♀♀, six ♂♂ taken near woods; June 15, a ♂ devouring a ♀ *Gomphus exilis* was taken.

17. Gomphus parvulus Selys.

1891, June 25, one ♀ near brook.

25. Epitheca (Somatochlora) Walshii Scud.

1891, July 30, one ♂ in meadow near brook; August 5, one seen flying.

26. Epitheca (Somatochlora) forcipata Scud.

1890, Aug. 14, one ♂ in meadow.

28. Cordulia (Somatochlora) lepida Selys.

1891, June, one ♂; June 26, one ♀ by roadside.

29. Cordulia (Somatochlora) libera Selys.

1890, June 19, one ♂ in woods. 1891, June 5 to 30, quite common in and near woods.

HYMENOPTEROLOGICAL NOTES.—II.

By WM. J. FOX, Phila., Pa.

Crabro nitidiventris n. sp.

♀.—Black, shining; first two joints of the antennæ entirely, line on prothorax above, broadest laterally, tubercles, an elongated spot behind them, dot on tegulæ, spot at base of wing, line on the basal half of the scutellum, two transverse spots on the upper surface of the metathorax, the apex of anterior and medial femora, the tibiæ and tarsi, and a large macula on each side of segments 2–5, all yellow, the extreme apex of the posterior tibiæ and the apical tarsal joints, brownish. Head quadrate; clypeus, front behind the antennæ, and the posterior orbits with bright silvery pubescence, most dense on the former; head clothed with pale fuscous hairs, finely and sparsely punctured, the punctures on the cheeks very delicate, strongest on the front; vertex depressed, with a strong, pear-shaped pit on each side near the top of inner eye margin; frontal impressed line deep; clypeus feebly carinated medially, the anterior margin armed with three teeth, which are widely separated; apical half of mandibles ferrugineus, the apex bidentate; scape of antennæ narrow, longer than the first three joints of the flagellum united, second joint of the flagellum nearly three times as long as the preceding one, and about two and a half times longer than the succeeding one. Thorax and legs sparsely clothed with pale fuscous pubescence, pertaining to silvery on the pleuræ and pectus; the thorax with fine, separated punctures, very fine on the pleuræ; prothorax slightly emarginate above; postscutellum parted by an impressed line; metathorax with two transverse enclosures on the upper surface, the medial sulcus very strongly marked, and is deepest basally and on the posterior face, all the sulci marked with strong foveæ, the posterior face with the lateral edges marked with a series of rugæ, before the apex there are several very strong, transverse striæ; the top of the metapleuræ marked by a series of strong foveæ, which form an angle at about the middle; wings hyaline, tinged with brownish along the costa, nervures brown, the stigma black. Abdomen glabrous, sparsely clothed with pale fuscous hairs, most dense beneath and on segments 4–6 above; last segment above with a longitudinal, medial carina, which does not extend beyond the middle. Length 11—12 mm.

Two specimens, Camden County, N. J., July 5, 1891, and Illinois (coll. Amer. Ent. Soc.). The specimen from Illinois has the middle clypeal tooth indistinct. Related to *C. obscurus* and *C. contiguus.*

Crabro excavatus n. sp.

♀.—Black; head transversely quadrate; front subopaque, with fine and exceedingly close punctures; near the inner orbits, before the anterior ocellus, there is a short, oblique sulcus; vertex shining, with deep separated punctures; face very narrow in the region of the antennæ, the space between the eyes at this place is a little broader than the length of the third antennal joint; clypeus well carinated, the anterior margin entire, rounded out; antennæ short, the third joint about two and a half times longer than the second, and is a little longer than the two following joints united; the ocelli situated in slight, but distinct, depressions; mandibles strongly bidentate at apex. Prothorax emarginate medially; dorsulum with very strong punctures, the punctures confluent anteriorly; scutellum and postscutellum with strong, separated punctures, those on the postscutellum feeblest; metathorax roughened, with a strong medial sulcus, which extends to about the middle, where it is interrupted by a transverse ridge, the posterior face rugose, depressed medially; mesopleuræ rugose; wings subhyaline, nervures blackish. Abdomen shining, the segments depressed at base and apex, with distinct, separated punctures, beneath segments 2–5 smooth, with the exception of a series of strong punctures, which extend from side to side at about the middle; the last segment above strongly excavated; mandibles, except base and apex, prothorax above, tubercles, an elongated oblique spot on the mesopleuræ beneath the tegulæ, scutellum and two spots on the dorsulum at the anterior-lateral angles of the scutellum, the postscutellum, legs, the tarsi lighter, the first abdominal segment above, except the apical margin, which is black, the second above and beneath, except apical portion, all reddish brown;* scape and following two antennal joints, and a large, ovate spot on the second abdominal segment, situated at about the middle, yellow; head and thorax above clothed with short, erect, fuscous hairs; the clypeus, face, cheeks and thorax beneath with silvery pubescence. Length 9—10 mm.

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* This may be due to being left too long in the cyanide bottle, but as part of the antennæ and two spots on the abdomen are yellow, it is probable that it is the natural color.

♂.—Differs from the female as follows: joints five and six of the antennæ roundly emarginate beneath, the seventh joint slightly so; the third antennal joint very slightly, if any, longer than the fourth; the metanotum with eight or nine strong ridges, which extend from the base to the transverse ridge; wings darker along the costa. Abdomen strongly punctured, the punctures closer than in the female, the first segment, except the base and apex, and a transverse fascia on segments 2–5 above, reddish brown, the fascia on the third segment narrowest; beneath the abdomen is finely and rather closely punctured. Length 9 mm.

Described from two females and one male specimens. Collected by Mr. Chas. W. Johnson, in Florida, in the vicinity of St. Augustine.

(To be continued.)

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RHEXIDIUS.

BY EMIL BRENDEL, M. D.

This genus belongs to the second group of the tribe Trichonyni according to the arrangement of Mr. Achille Raffray, the first group having the posterior coxæ distant and the first ventral segment large, including the genera *Trichonyx* and *Amauronyx*, while the remaining genera, or the second group, have the posterior coxæ contiguous, or nearly so, and the first ventral segment very short, in some hardly visible. Among the latter group my attention is called to the genera *Trogaster*, *Rhexidius*, *Oropus* and *Prorhexius*.

Trogaster is characterized by having the first ventral segment visible (according to Mr. Raffray), while in the others it is said to be invisible, except as a button between the coxæ. But this, according to my investigation, does not apply to *Rhexidius* and *Oropus*, on which, by lifting the femur it can be traced to the sides of the abdomen, where it is even more visible than in the middle. Thus the difference between the four genera is rather inconspicuous.

With the genus *Trogaster* I am not acquainted, but by the description of Dr. D. Sharp, it should have an analogous form with *Oropus* and *Rhexidius*, and Capt. Casey indicated to me as the differences: the pronotum having the lateral spinous tubercle nearer the middle, the frontal sulcus not reaching the occipital foveæ and having different forms of the antennæ in the sexes.

The only difference between *Oropus* and *Rhexidius* lies in the possession of a minute spinous tubercle at the sides of the pronotum in a line with the lateral foveæ. The length of the second ventral segment, which ought to be measured at the sides, not in the middle, where commonly intubation takes place, is larger, but in length not much more than subequal to the third and fourth ventrals; therefore *Prorhexius* is identical with *Rhexidius*.

Now I will describe a new species of *Rhexidius* which makes the difference between the other two genera very doubtful, and perhaps brings them very near to *Trogaster*.

Rhexidius trogasteroides n. sp.

♂.—The forms of the several parts of the body is exactly like *Oropus;* uniformly reddish brown. Length 1.66 mm. Head and prothorax granulated (as in *Rhexidius granulosus*), elytra densely punctured, abdominal dorsum nearly smooth. The head very transverse, though less so than in *R. granulosus*, occiput triangularly impressed at its base, occipital foveæ large, near the eyes and in a line with the anterior part of the eyes; the frontal ridge and the subjacent arcuated sulcus limited half way between foveæ and the supra-antennal swelling, the sulcus ending in a deep puncture just in front of the respective fovea (*Trogaster*). Antennæ as long as the head and half of the prothorax; joint 1 as thick as the width of the eye, cylindrical, longer than wide; 2 globular, two-thirds as thick as the first; 3 and 4 equal, rounded, somewhat transverse, much smaller; 5 projecting inside in form of a wedge, half as long outside, and three times as wide as the fourth; 6 as wide as 5, inflated inside, here as long as the first joint, and outside at the insertion as long as second; 7–10 gradually increasing in width, transverse, trapezoidal, together as long as the second, third and fourth conjointed; 7 as wide as the second; the 10th, or the base of the last joint as wide as the first; 11 as long as the four preceding, and beyond the middle more than twice as wide as the first joint (*Trogaster*). Palpi as in *Oropus*. Prothorax as in *Rhexidius* in sculpture, but the median sulcus has a deeper place in the anterior third, and the sides are rounded anterior to the line of the foveæ, here suddenly forming a sharp edge with a very short emargination producing a tubercle similar to *Oropus*, except that the tubercle is not as sharply pointed. Elytra as in *Oropus*, with four basal punctures and the respective lines, the third longer than the second, the fourth short and recurrent. Abdomen as in *Oropus*, with the dorsal border punctured, the penultimate ventral with a transverse impressed line; ♀ unknown.

Three specimens were discovered on Chestnut Ridge, Pa., by P. Jerome Schmitt, who deserves great honor as a circumspect entomologist.

A comment as to the generic differences is unnecessary, but there are two more specimens, ♂ and ♀, which were discovered in Franklin County, Pa., by my friend, H. Ulke, who kindly loaned them to me a year ago; they are in his cabinet, and may bring these genera still nearer together.

Rhexidius intermedius n. sp.

Uniformly brown. Length of ♂ 1.5 mm.; ♀ 1.66 mm.

♀.—Head as transverse as in *Oropus*, somewhat punctulate. Antennæ, without the last joint, as long as the width of the head, the last joint as long as the first and second together. Eyes very much smaller than in *Oropus;* occiput perpendicularly declining toward the neck in an angulated line from the sides to the middle of the base. Prothorax little wider than the head with a twice interrupted median sulcus and a straight transverse sulcus, which is triangularly dilated in the middle, ending in pubescent foveæ laterally situated inside of a slightly ovate depression, the base strongly punctured, the disc slightly uneven, impunctate; no crenulation or a spine at the sides. Elytra as in *Oropus*. Abdomen at the base in the middle depressed, the depression divided by a short carina; the borders of the first visible segment divergent; the first three visible segments equal, one-quarter of their width long, fourth and fifth shorter; ventrals nearly equal in length.

♂.—Has the ninth and tenth joints of the antennæ shorter, more transverse, and the last longer than in the female. Head, prothorax and elytra, more visibly punctulate. Eyes somewhat larger. Prothorax with the median sulcus not interrupted, but abbreviated in the anterior third. Abdomen as in the female, but the junction of the fourth and fifth segments transversely impressed.

NOTES ON ARKANSAS LEPIDOPTERA.

By R. R. Rowley, Fort Smith, Ark.

Five hundred miles to the southwest of Curryville, Mo., where the writer has spent half a score of years in the study of Entomology and Geology of a most interesting region, is the "Border City," Fort Smith, Ark. A residence here since the middle of September has given him but limited opportunity to enter into the study of nature, but he could not, if he wished, close his eyes on the fairy-like creatures that flit from blossom to blossom in this city of flowers. The first finds were two splendid larvæ of that magnificent moth, *Citheronia regalis*, on a persimmon tree, where, from indications, a number of other caterpillars had been feeding; two larvæ of *Eacles imperialis* on maple; two of *Ceratomia* *amyntor* and one of *Telea polyphemus* on elm; larvæ and cocoons of *Actias luna* on pecan, and one wandering caterpillar of *Deilephila lineata.* A fine pupa of *Macrosila cingulata* was found in a sweet-potato patch and several ragged imagos, brought to the class-room by pupils, indicate an abundance of this beautiful moth.

The first butterflies noticed were *Neonympha sosybius*, flitting aimlessly about the streets, and occasional specimens of *Papilio philenor* and *Limenitis ursula.* While *Colias eurytheme* was quite common, *C. philodice*, *Pieris protodice* and *P. rapæ* seemed much less abundant.

In October, *Callidryas eubule*, *Terias nicippe*, *T. lisa*, *Nathalis iole*, *Euptoieta claudia*, *Phyciodes phaon*, *Pamphila huron*, *P. phylæus* and *Pyrgus tesselata* were plentiful, the first two species at cultivated flowers and the others at the blossoms of *Helenium tenuifolium*, a thrifty weed about the streets and roads here.

Three fine examples of *Colias cæsonia* were taken at flowers, one *Grapta interrogationis* in the woods, one *Paphia troglodyta* at mud, four *Junonia cœnia* by the roadside and on flowers, several specimens of *Pyrameis cardui*, one *P. huntera*, two *Erisia texana*, a few *Phyciodes tharos* and a number of *Danais archippus* on *Helenium tenuifolium* blossoms.

A single ♀ *Agraulis vanillæ* was taken on Geranium flowers in the shade, about five o'clock P.M., late in October. One dark specimen of *Pyrgus*, probably a variety of *Tesselata*, was captured November 7th. The last butterflies seen, were *Terias lisa*, *T. nicippe*, *Pyrgus tesselata* and *Nathalis iole* on the 16th of September. Spring and Summer will doubtless add many more species to this list. The food-plant of *Iole* here is probably *Helenium tenuifolium.*

For assistance in the identification of a few of the species mentioned above, the writer is indebted to Mr. Wm. H. Edwards, of Coalburgh, and Dr. Henry Skinner, of Philadelphia.

For the determination of a plant to Prof. Geo. Vasey, of Washington, D. C.

"An electric insect killer is the latest novelty in that line. It is formed by a cover of wire gauze, which is placed over a lighted candle. The gauze is an electric circuit, and when insects touch it they are killed."

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of Entomological News solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. Entomological News has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—Ed.

☞ A subscriber has sent us a remittance with name and address not given on subscription blank accompanying the same. We make it a rule to acknowledge the receipt of all remittances, and beg to be advised by those who have sent in their subscriptions and have received no acknowledgment.—Treasurer.

Owing to the sickness of the editor, we are unable to publish a plate with this number of the News. Correspondence attended to soon.

After many unexpected and unavoidable delays, the new Check List of Lepidoptera of Boreal America, by Prof. John B. Smith, has been completed, and is now ready to mail to applicants. The price is $1.00 per copy.

Will the contributor who favored the News with the interesting paper "On the species of *Oecanthus* Serv." kindly communicate with the editor, as his letter has been mislaid and his name is not attached to the manuscript of the paper referred to?

A very good suggestion comes to us from a progressive subscriber, viz.: to give each month a list of species added to the insect fauna of North America. This information will be appended to the "Literature" column, and we trust that it will be an improvement that will be appreciated by entomological workers.

A new variety of Pamphila.—*Pamphila massasoit*, var. *suffusa* Laurent. The describing of the many variations of Lepidoptera caught in the field is of value as well as of interest to the entomological world, but the attaching thereto of a name to burden our already over-crowded catalogues, seems to me to be little less than an entomological sin, but where the form described teems in numbers, or is known as a local variation, I think the same should be given an appropriate name. In the Pamphilas, particularly, there are several such forms or variations occurring among the species found around Philadelphia. One of these, *Pamphila massasoit*, var. *suffusa*, makes its appearance about July 4th. It is found in low meadow- or swamp-lands. The variation consists principally in the yellow markings of the under surface of the posterior wings being almost obliterated by a suffusion of dark brown, while the under surface of the anterior wings is of a uniform dark brown, the light colored margin found in the normal form being entirely wanting. About one in every ten specimens caught will be found to be *suffusa;* the variation is generally found among the males, but also occurs in the females, but more sparingly where it occurs in the females. The insect is without the usual yellow spots on the upper surface of the wings.—PHILIP LAURENT, Phila.

SYNONYMS OF NOCTUIDÆ.—Mr. W. H. Patton has given in ENTOMOLOGICAL NEWS, vol. ii, p. 206, a synonym of "*Homohadena infixa* Wlk." which requires correction. I have seen Walker's type, in the British Museum, and find it exactly like the type of Mr. Grote's *H. kappa*, which is also in the British Museum. *H. incomitata* and *H. badistriga* are both as good species as are usually found in the Noctuidæ, and come at exactly opposite ends of the synoptic table in my revision of the species (Proc. U. S. Nat. Mus. xiii, 399). Harvey's type is not rubbed, and I have seen any number of specimens just like it. That *Xylophasia infixa* Wlk. probably referred to a species of *Homohadena* I indicated in my revision of *Xylophasia* (Proc. U. S. Nat. Mus. xiii, 446), but was not able to fix it positively. It would be interesting to know upon what Mr. Patton bases his synonymy.—JOHN B. SMITH, New Brunswick, N. J.

Prof. KELLICOTT'S "Note on Exceptions" brought vividly to my mind the number of interesting varieties of *Caberodes confusaria* that had escaped from my collecting-bottle by its remarkable powers of resisting the action of cyanide. I have often sought for an explanation, but without definite results. In my observations, Hymenoptera and Diptera are the most sensitive to the fumes of cyanide, which I have thought might arise from their nervous activity producing rapid respiration. Water beetles as a rule are slow to yield to its influence, which is probably the result of their having a supply of pure air under their elytra which would last for a while. Newly-hatched beetles may remain for a whole day in a strong bottle and revive again when exposed to the air, the result of their partially dormant condition. *Caberodes confusaria* is an active insect, and therefore ought to breathe rapidly, and so get the full benefit of the poison, but in its case neither the principle nor the poison works satisfactorily.—I. ALSTON MOFFAT, London, Ontario.

I THINK a "wave" of *Erebus odora* must have struck Colorado this Summer. I have occasionally met with this species in the State before, but not more than one example in a season. This year, however, was a notable exception; one day last June I took one on the sidewalk at Colorado Springs; the same evening I found one on the platform at Cañon City Depot. The next morning I reached Salida just at daybreak; during the two days I stayed there I took about a dozen pretty fair examples. These were resting on the lamp-posts, or on the ground close by. It was quite a rainy time in this part of Colorado, and I saw fragments of a good many in the mud. The lamp trimmer told me they had been quite a nuisance for more than a week, flying into houses and stores where there was a bright light, in many instances causing alarm (he called them bats). On my return from southwest Colorado, two weeks later, our train stopped at Salida at 9 A.M.; during the "twenty minutes for refreshments" I looked round under the lamps. In a coal-box, near one, were two battered examples of *E. odora*, but on the lamp-post, about seven feet from the ground, was a specimen of the silken, gray beauty *zenobia*, the first I had seen alive. I have visited this district many times in the last seven years, and my late friend, W. S. Foster, a keen collector, resided there two years, yet we never saw either species there before, and I feel pretty certain that their occurrence this year is something unusual.

DAVID BRUCE, Brockport, N. Y.

A SPECIMEN of *Xylocopa*, received from Mr. H. F. Wickham, bearing the label Fort Yuma, Cal., turns out to be the Cuban *X. cubaecola* Lucas. To the best of my knowledge, this species has not been recorded from any other locality, although it occurs, probably, in Mexico. The following table will assist in determining the Californian species of *Xylocopa:*

Abdomen bottle-green, bronzed; front in ♀ with a strong projection. Length 22—25 mm. . . . . **californica** Cr.

Abdomen bronze-purple; frontal projection almost obsolete, having the appearance of a faint tubercle. Length 18 mm. . **purpurea** Cr.

Entirely black ♀; ♂ of *cubaecola* entirely fulvous, with fulvous pubescence; ♂ of *orpifex* with the face and clypeus yellowish.

  Ventral abdominal segments strongly carinated; clypeus with the punctures becoming somewhat obsolete medially; ♂ fulvous. Length ♀♂ 18—23 mm. . . . . . . **cubaecola** Luc.

  Ventral segments of the abdomen faintly carinated; clypeus equally punctured throughout; ♂ with the thorax clothed with pale pubescence. Length ♀♂ 17—18 mm. . . . . **orpifex** Sm.

WILLIAM J. FOX.

WHILE on a trout fishing trip on the Nepigon River last July we broke camp some forty miles up river, after three days' of showery weather, and, with birch-bark canoes, started for Red Rock, the Hudson Bay Company's post at the mouth of the river. There are a number of rapids around which canoes and camp equipage must be carried, and at which the different meals are usually cooked, while the Indians are making the portage. On July 14th, a hot day following the rains, we were portaging around Cameron Pool and rapids, when one of the party, who had descended the higher land to the bank of a little creek, came rushing back with an ordinary fish landing-net containing ten fluttering *Limenitis arthemis* which he had caught with one stroke. Of course they were ruined, but the entomologist of the party, upon investigation, found the ashes, where camp fires had been made upon the banks of the creek, completely covered with this beautiful butterfly, one space of about four and a half feet in diameter being entirely hid by a gorgeous coloring of purple, black and white, which shone beautifully in the bright sun. The first stroke of the net disturbed them, but 47 specimens were taken as they hovered about without moving from the spot, and over 100 were taken within a space of 30 feet square. They seemed to be attracted by the brine or water thrown from the pans after freshening bacon and salt pork at the camp fires. Paddling down the creek we passed another congregation of like proportions, but we had a forty-mile canoe voyage to complete by ten o'clock that night in order to catch a steamer at Port Arthur, so they were not disturbed. It is not often an entomologist stumbles upon a sight so beautiful.—**Frank S. Daggett**, Duluth, Minn.

Perophora melsheimerii.—This elegant case bearing larva was taken at Sugar Grove, O., September 26th, feeding on oak. The single larva examined differs from that described by Harris in the absence of the antenna-like appendages at the side of the head; this is also characterized by Packard in "Forest Insects." It is also slenderer than others de' scribed, nor are the "spiracles so situated as to be visible from above,'- except the last pair. The prothoracic segment is not dark like the head, but concolorous with the whole anterior third, *i.e.*, pale brown with diffuse lateral stripes. The case, too, whilst of the same general type as that figured by Harris, is a more finished piece of architecture. One side, the floor, is elliptical and plane; the opposing piece, the roof, is also elliptical, but both longer and wider and cut with the mid-vein in the longer diameter, so that when the edges of the two are sewn together it arches up, forming a roof; the mid-vein thus forms the ridge of the roof; this also projects at the ends constituting the verandas over the round openings. The dimensions are: length, 28 mm.; width, 8 mm.; height, 6 mm.; diameter of openings, 4 mm.

I have not seen the artificer at work. It would certainly be interesting to observe how, with the simple tools at his disposal, so wonderful a house is built. I imagine that the plan of procedure is about as follows: two closely parallel leaves are selected; these are spun together along the elliptical outline of the finished product, the plane one being first strengthened by a silken lining; then by cutting away the leaves about the outside the case is set free.—D. S. K.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Address all packages to Entomological News, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

ZOOLOGISCHER ANZEIGER (Leipzig), Nov. 2, 1891.—The lateral eyes of spiders, by K. Kishinouye, figs. On the anatomy of the male sexual organs of the Honey Bee, by G. Koschewnikoff.

TRAVAUX ET MEMOIRES DES FACULTES DE LILLE. I, No. 4, 1891.—The wax of Bees (analysis and adulterations), by A. and P. Buisine.

LE NATURALISTE (Paris), Nov. 1, 1891.—Protective resemblance in European Lepidoptera, by F. Plateau; figs. Description of new Lepidoptera,* by P. Dognin; *Lafajana* n. gen. Development of *Hydrophilus piceus*, by L. Planet; figs.—Dec. 1, 1891.—Diagnoses of new Lepidoptera,* by P. Dognin. Habits and metamorphoses of *Corœbus amethystinus* Oliv., by Capt. Xambeu.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Oct. 3, '91. —Two new species and a new genus of African Lepidoptera,* by F. J. M. Heylaerts; *Gymnelema* n. gen. Melanges Entomologiques: VII. Diagnoses of Coleoptera from the Congo,* by A. Duvivier; *Djabiria*, *Phrynetoides* n. gen. Dichotomous table to aid in determining the Belgian species of Coleoptera Heteromera (last part), by L. Coucke. Enumeration of the Hemiptera of Belgium, by E. Coubeaux; Heteroptera. *Papilio machaon* var. *marginalis*, by M. Robbe.

NOTES ON CALOSPASTA Lec., by G. H. Horn, M.D. (reprint from Proc. Amer. Philos. Soc. xxix, pp. 99–102), Oct. 27, 1891. A synoptic table of the species is given. *C. histrionica*, *C. morrisoni*, S. Cal., n. sp.

REVUE DES SCIENCES NATURELLES DE L'OUEST, 4, October, 1891, Paris.—General considerations on the classification of the Acarines, followed by an attempt at a new classification, by Dr. Trouessart (to be continued).

COMPTE RENDU. SOCIETE DE BIOLOGIE (Paris), Nov. 20, 1891.—Organization of a thoracic ganglion in some Coleoptera of the tribe Melolonthina, by A. Binet. A peculiar Acariasis on Paduan fowls produced by a new Acarine species, *Lophoptes patavinus*, by P. Megnin; figs. On the intermediate host of *Echinorhynchus gigas* in America, by C. W. Stiles [*Lachnosterna*].

ENTOMOLOGISCHE NACHRICHTEN (Berlin), xvii, 21, November, 1891. —Some remarks on the German species of *Calathus*,* by C. Verhoeff. List of a collection of Coleoptera from Cordoba in Argentina, by Dr. Frenzel. On doubtful species of *Rhizotrogus*, a clear answer to Herr E. Brenske, by Dr. G. Kraatz.—No. 22, November, 1891.—A new contribution to the knowledge of the German *Saldæ*,* by C. Verhoeff. Diptera collected by Herr F. Grabowsky in Hartz Mountains, by V. von Roeder.

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* Contains new species other than North American.

New Singing Cicadæ from Cameroon collected by Dr. Paul Preuss,* by Dr. F. Karsch; *Trismarcha*, *Nablistes*. n. gen.

DENKSCHRIFTEN DER KAISERLICHEN AKADEMIE DER WISSENSCHAFTEN. MATHEMATISCH-NATURWISSENSCHAFTLICHE CLASSE, lvii. Wien, 1890 (1891).—Comparative Studies on the Germ-band (Keimstreif) of Insects, by V. Graber; 12 plates, 38 figures.

ERGAENZUNGSHEFT ZUM 68. JAHRESBERICHT DER SCHLESISCHEN GESELLSCHAFT FUR VATERLANDISCHE CULTUR. Breslau, 1890 (1891).—Contributions to the knowledge of the European Zoocecidæ and their distribution, by G. Hieronymus.

VERHANDLUNGEN DES NATURHISTORISCHEN VEREINS DER PREUSSISCHE RHEINLANDE, WESTFALENS UND DES REG.-BEZIRKS OSNABRUECK. xlviii, 1. Bonn, 1891.—Biological Aphorisms on some Hymenoptera, Diptera and Coleoptera, by C. Verhoeff; 3 plates.

OFVERSIGT AF FINSKA VETENSKAPS-SOCIETETENS FORHANDLINGAR, xxxii, 1889-90. Helsingsfors, 1890 (1891?).—Contributions to the knowledge of the Coleopterous Fauna of Southwestern Siberia—Curculionidæ,* by J. Faust.

BERICHTE DER NATURFORSCHENDEN GESELLSCHAFT ZU FREIBURG I. B., v, 1. Freiburg I. B., 1890 (1891).—On reproduction of the Diplopods (Chilognatha), by O. von Rath; 1 plate.

ATTI DELLA R. ACCADEMIA DELLE SCIENZE DI TORINO, xxvi, 2, 1890-91.—The European species of the genus *Chrysotoxum* Meig.,* by Dr. E. Giglio-Tos; 1 plate.

JAHRBUCHER DES NASSAUISCHEN VEREINS FUR NATURKUNDE, 44. Jahrgang. Wiesbaden, 1891.—Observations on the manner of living and development history of some indigenous species of beetles, by Dr. Buddeberg. Macrolepidoptera of the lower Rhine country, 2d part, by A. Fuchs. Catalogue of the Coleoptera of Japan, 2d supplement, by H. von Schoenfeldt.

LA NATURALEZA, 2d series, II, 1. Mexico, 1891.—Description of indigenous Coleoptera, by Dr. D. Eugenio Duges (for new species, see *post*); 2 plates.

PROCEEDINGS OF THE CALIFORNIA ACADEMY OF SCIENCES, 2d series' III, 1. Sept. 1, 1891.—Description of the larva of *Dascyllus davidsonii* Lec., and a record of its life-history, by J. J. Rivers; 1 plate. New species of Scarabæidæ, id (see *post*).

BULLETIN OF THE BUFFALO SOCIETY OF NATURAL SCIENCES, v, 3, '91. —List of the Macrolepidoptera of Buffalo and vicinity, by Edw. P. Van Duzee.

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* Contains new species other than North American.

List of Lepidoptera of Boreal America, by John B. Smith, assisted by Henry Skinner, M.D., Geo. D. Hulst, Ph. D., C. H. Fernald, Ph. D., C. V. Riley, Ph. D. Philadelphia, Amer. Ent. Soc. 1891, 124 pp., 6020 species listed.

Contributions towards a Monograph of the Noctuidæ of Temperate North America.—Revision of the species of Mamestra, by John B. Smith (from Proc. U. S. Nat. Mus. xiv, pp. 197–276, pl. viii–xi), Washington, 1891 (for new species, see *post*).

Descriptions of new Cynipidæ in the Collection of the Illinois State Laboratory of Natural History, by C. P. Gillette, 1891; 1 plate (see *post*).

Journal of the Institute of Jamaica, I, 1, Kingston, November, 1891.—Notes on the transformations of some Jamaica Lepidoptera, by T. D. A. Cockerell.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

COLEOPTERA.

Calospasta histrionica Horn, Proc. Amer. Philos. Soc. xxix, p. 100, San Diego, Cal. *C. morrisoni*, p. 102, So. California.

Buprestis jimenezi Duges, La Naturaleza, 2d series, II, p. 7, fig. 10, Jalapa.

Melanophila nigra Duges, l. c., p. 8, fig. 11, Tupataro (Guanajuato).

Acmæodera moesta Duges, l. c., p. 11, fig. 17, Guanajuato. *A. jucunda* p. 14, fig. 20, Acapulco. *A. sinaloensis*, p. 14, fig. 21, Motagé, Sinalva.

Chrysobothris sobrina Duges, l. c., p. 19, Guanajuato. *C. armata*, p. 19, fig. 29, Chiapas. *C. ignota*, p. 20, fig. 30, Tupataro, Guanajuato.

Agrilus albofasciatus Duges, l. c., p. 23, fig. 35, Guanajuato. *A. de Borrei*, p. 24, fig. 36, id. *A. Sallei*, p. 24, fig. 37, id. *A. metallescens*, p. 26, fig. 39, id. *A. parvus*, p. 26, fig. 60, id. *A. bimaculatus*. p. 26, fig. 40, id. *A. fossulatus*, p. 27, fig. 41, id. *A. sexmaculatus*, p. 27, fig. 42, id. *A. rubrovittatus*, p. 28, fig. 44, id. *A. caliginosus*, p. 29, fig. 46, Tupataro. *A. igneosignatus*, p. 29, fig. 47, id. *A. cupreomaculatus*, p. 30, fig. 48, id. *A. tupatarensis*, p. 31, fig. 59, id. *A. consobrinus*, p. 32, fig. 51, id. *A. Kerremansi*, p. 32, fig. 52, id. *A. purpureus*, p. 31, fig. 53, Guanajuato. *A. tarrascus*, p. 33, fig. 54, Michoacan. *A. alemani*, p. 33, fig. 55, Guanajuato. *A. nanus*, p. 33, fig. 56, Tupataro. *A. carmineus*, p. 34, fig. 57, id. *A. novus*, p. 34, fig. 58, id. *A. chlorus*, p. 35, fig. 59, id.

Taphrocerus leoni Duges, l. c., p. 35, fig. 61, Siloa, Guanajuato, Michoacan. *T. Kerremansi*, p. 35, fig. 62, Tupataro.

Brachys chapusi Duges, l. c., p. 36, fig. 63, Tupataro. *B. hexagonalis*, p. 36, fig. 64, Guanajuato.

Lygirus Bryanti Rivers, Proc. Cal. Acad. Sci. (2), III, p. 97, Lower California.

LEPIDOPTERA.

Carphoxera n. gen. (Acidalinæ) Riley, Insect Life, iv, p. 112. *C. ptelearia*, p. 112.

Mamestra determinata Smith, Proc. U. S. Nat. Mus. xiv, p. 209, Col. *M. desperata*, p. 221, Me., N. H., Cal. *M. invalida*, p. 225, Cal. *M. u-scripta*, p. 228, Cal. *M. quadrata*, p. 248, Cal. *M. circumcincta*, p. 253, Cal. *M. longiclava*, p. 265, Col. *M. orbiculata*, p. 266, Col.

HYMENOPTERA.

Diastrophus scutellaris Gillette, Bull. Ill. State Lab., N. H.?, p. 192, Ill. *Antistrophus silphii*, p. 192, Ill. *A. laciniatus*, p. 194, Ill. *A. rufus*, p. 195, Ill. *A. minor*, p. 196. *A. bicolor*, p. 197, Ill. *Acraspis compressus*, p. 197, Iowa. *Dryophanta lanata*, p. 198, Iowa. *Chilasphis ferrugineus*, p. 200, Iowa. *Aulax bicolor*, p. 201, Ill. *Synergus magnus*, p. 202, Mich. *S. villosus*, p. 202, Iowa. *Coptereucoila marginata*, p. 203, Ill. *Eucoila 7-spinosa*, p. 204, Ill. *Eucoilidea rufipes*, p. 205.

Doings of Societies.

ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.—A regular meeting was held in the Hall, Oct. 22, '91, Director Geo. H. Horn, M.D., presiding. Meeting called to order at 8.20 P.M. Members present: Martindale, Laurent, Ridings, Horn and Skinner. Associates: Fox and Liebeck. The Publication Committee reported favorably on papers No. 255 and 256, entitled "Notes on North American Tachinidæ, sens. str., with Descriptions of New Genera and Species," by C. H. Tyler Townsend, and "Random Studies in North American Coleoptera," by Geo. H. Horn, M.D. Paper 257 was presented for publication. Mr. Nathan Banks, of Washington, D. C., was duly elected an Associate of the Section. HENRY SKINNER, *Recorder.*

A regular meeting was held in the Hall, Nov. 25, 1891. The meeting was called to order at 8.20 P.M. In the absence of the Director, Mr. Blake presided. Members present: Messrs. Ridings, Laurent, Blake, Skinner and Welles. Associates: Calvert, Nell and Haimbach. The report of the Executive Committee was read and received. A number of American and European Odonata were presented by Mr. Calvert; also the Jamaican Odonata collected by Mr. Wm. J. Fox. Donations to the library were read. The Publication Committee reported favorably on a paper entitled "A Revision of the North American species of *Phlepsius*," by Edw. P. Van Duzee. Papers Nos. 258, 259 and 260, were presented for publication.

Mr. Calvert stated that in the Trans. Amer. Ent. Soc. xvii, p. 33, 1890, he had first described the supposed female of *Somatochlora Walshii* Scud., remarking then that it was much like the female of *S. forcipata* Scud., specimens of which he had not then seen. During the Summer of 1891 he had received the female and three males of *forcipata* from Prof. F. L. Harvey, at Orono, Me. A comparison of the females of *Walshii* and *forcipata* showed that the former was distinct. He knew of no evidence that the female *Walshii* was other than he had described it to be. Miss Wadsworth took a second male of *Walshii* at Manchester, Me., during the season of 1891; the first male which she had taken was now in Mr. Calvert's collection.

Dr. Skinner, Mr. Ridings and Mr. Laurent, were appointed a committee to make nominations for the coming year. Mr. Ridings moved that, when the Section adjourn, it adjourn to meet on the second Monday in December. HENRY SKINNER, *Recorder.*

A regular meeting was held in the Hall, Dec. 14, 1891, Director Geo. H. Horn, M.D., presided. Members present: Messrs. Horn, Welles, Martindale and Ridings. Associates: Calvert, Fox and Johnson. In the absence of the Recorder, owing to sickness, Mr. J. H. Ridings acted as such. The reports of the Treasurer and of the Joint Committee on ENTOMOLOGICAL NEWS were read. The committee on nominations named the following to serve as officers for the ensuing year: Director, Geo. H. Horn, M.D.; Vice-Director, Isaac C. Martindale; Recorder, Henry Skinner, M.D.; Treasurer, E. T. Cresson; Conservator, Henry Skinner, M.D.; Publication Committee: J. H. Ridings and Philip Laurent. On motion, the Recorder was directed to cast a ballot for the Section, and the above were declared elected. J. H. RIDINGS, *Recorder, pro tem.*

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, November 5, 1891.—Messrs. Theo. Gill and C. W. Stiles were elected active members of the Society, and Rev. C. J. S. Bethune, of Port Hope, Canada, and Prof. H. A. Morgan, of Baton Rouge, La., corresponding members.

Under short notes, etc., Mr. Schwarz exhibited some fine and complete examples of the galleries made by *Hylesinus sericeus* in the bark of *Abies menziesii* from the Wahsatch Mountains of Utah. These galleries closely resemble those made by the species of *Scolytus.*

The Secretary read a note by Mr. Wm. D. Richardson, of Fredericksburg, Va., corresponding member of the Society, on the life-history of *Loma Sayi.* The food-plant of this species is *Commolyna virginica;* the eggs are laid singly on the leaves, and the larvæ usually bore in the flower stalks, ejecting their fæces from the entrance hole of the burrow. Discussed by Mr. Schwarz.

Dr. Marx exhibited two remarkable spiders occurring in our fauna: (1) a representative of the South American genus *Nops* characterized by having but two eyes; (2) a puzzling species, the affinities of which he pointed out. It resembles an *Epeira*, but is altogether different in characters.

Mr. Schwarz read a paper on the time of flight in Scarabæid beetles, in which he related an observation made last June by Mr. H. C. Hubbard and himself concerning an undescribed species of *Lachnosterna* which flies before sunset in the alpine regions of Utah. He added remarks on the flying habits of other species of *Lachnosterna* and of Scarabæid beetles in general. It appears that in this family the unity in habit regarding the time of flight is generally maintained so far as genera are concerned, and that there are comparatively few exceptions to this rule.

Mr. Schwarz also exhibited a species of the family Monommidæ collected on Key West and at Biscayne Bay, Fla., and stated that after a careful study he has come to the conclusion that it is identical with *Aspathines ovatus* Champion recently described from Central America, which adds a new genus to our fauna. Discussed by Messrs. Marlatt, Howard, Mann and Schwarz.

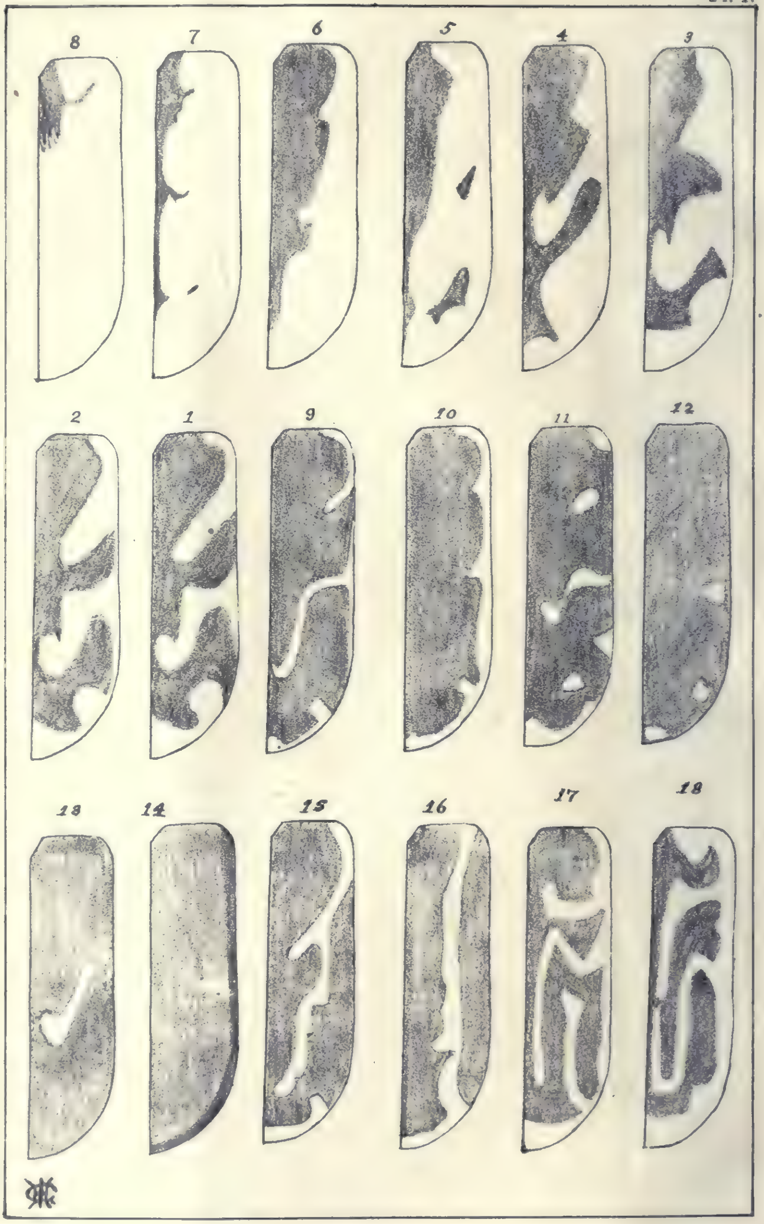
Mr. Howard read a paper on the "Habits of Molittobia," suggested by Mr. Ashmead's communication at the proceeding meeting. He gave a comprehensive review of the literature, showing all of the hosts of this genus of parasites, proving that it is both parasitic and hyperparasitic. He added an account of the rearing of *M. pelopæi* Ashm. from dipterous puparia found in Pelopæus cells by Mr. A. N. Caudell. Discussed by Mr. Ashmead.

Mr. Banks read a paper entitled "A new genus of Phalangiidæ from North America," in which, under the name *Caddo* nov. gen. *agilis* n. sp., he described a peculiar Phalangid collected in woods near the seashore on Long Island. Figures representing the peculiar features of the insect were exhibited.

Dr. Marx gave some remarks on the geographical distribution of spiders, and stated that the Drassidæ, formerly supposed to be boreal in habitat, were now found to occur in the tropics in abundance, and that in fact we have not a single family that is entirely northern in range. In the Attidæ, however, certain genera may prove to be altogether boreal, but the family is not well worked up.

C. L. MARLATT,
Recording Secretary.

ENTOMOLOGICAL NEWS for December was mailed December 2, 1891.



CICINDELA.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. FEBRUARY, 1892. No. 2.

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Variations of Color-markings in Coleoptera.

By GEO. H. HORN, M.D.

Recently the subject of variation in coloration has been discussed before the Society of American Naturalists with the view of eliciting an expression of opinion as to whether color variation proceeded in a regular course, or was hap-hazard and accidental.

My observations have been that variation proceeds in regular lines, easily demonstrable with sufficient material, produced by external influences which are at present but partly understood.

There is probably no branch of zoology better fitted to illustrate this point than Entomology, from the abundance of species and the frequent occurrence of genera with large numbers of species in which a greater or less similarity of marking is observable.

As a beginning, in the illustration of this subject, it is best to select a genus well known to all collectors by the numbers of species possible in most collections. Cicindela has therefore been chosen.

Any one in glancing over his series will perceive that there is a great similarity of marking between many species. This similarity, which may be considered as the type of marking and illustrated by fig. 1 of the plate, representing *vulgaris* is the underlying pattern from which all the forms observed in our Cicindelæ have been derived.

Before going further it is well to present the following propositions that the argument and the illustrations may be understood.

1.—The *type* of marking is the same in all our species.

2.—Assuming a well marked species as a central type the markings vary,

a, by a progressive spreading of the white.
b, by a gradual thinning or absorption of the white.
c, by a fragmentation of the markings.
d, by linear supplementary extension.

3.—Many species are practically invariable. These fall in two series.

a, those of the normal type, as *vulgaris*, *hirticollis* and *tenuisignata*.
b, those in which some modification of the type has become permanent, probably through isolation, as *marginipennis*, *togata* and *lemniscata*.

4.—Those species which vary do so in one direction only. That is, supposing a species begins typically with markings similar to *vulgaris*, the variation may be either in the direction of thickening and increase of white as in *hyperborea*, *generosa* and others, or in the direction of thinning or fragmentation of the white with perhaps an entire loss of markings as in *hæmorrhagica*, *splendida*, or *obsoleta*.

The first two propositions must be considered as applying to the species of the genus collectively, the last two to the species separately.

The accompanying plate has been prepared to illustrate these propositions. It must, however, be understood that, in tracing the derivations from the typical, it is not possible to use one species as these modifications go on gradually through a number of species, one sometimes beginning where another ends.

In the plate fig. 1 represents *vulgaris*, which is a fairly typical species, following through *generosa* (2–3), *pamphila* (4), *hyperborea* var. (5), *togata* (6), *gratiosa* (7), *canosa* (8), we finally arrive at a perfectly white elytron as seen in some varieties of *dorsalis*.

Following in the other direction through *tenuisignata* (9), *marginipennis* (10), *Hentzii* (11), *sexguttata* (12), *hæmorrhagica* (13), and *splendida* var. (14), it will be observed that through a gradual thinning or absorption of the markings, or by their fragmentation and obliteration we arrive at the opposite result of elytra without any white markings whatever; as in many forms of *obsoleta*, *scutellaris*, *punctulata* and *hæmorrhagica*.

Those species which vary from the type in having the markings broken into spots, as 12-*guttata* or *Hentzii*, may lose the spots by a gradual decrease of size, so that they all seem to disappear nearly at the same time, or the spots may disappear successively, those on the disc being the first to go, while the marginal spots remain.

From our series it would be difficult to say which spot is the most persistent, but it is probably the apical lunule, as there are more with entirely dark elytra with slight traces of this spot than with any other, as shown in *abdominalis* and *punctulata*.

Forms like *lemniscata* (16) seem very far removed from the type, but many forms of *imperfecta* (15) show how the markings gradually leave the margin and tend by fusion to form a vitta at first somewhat oblique, but finally becoming nearly median.

The last two figures on the plate represent the markings of *Gabbii* (17) and *Saulcyi* (18), in which the ends of the bands or lunules are greatly prolonged. The latter form, which represents *dorsalis* as well, is but rarely seen so perfectly marked, the tendency being toward a greater extension of the white. The other species is scarcely variable, although equally a coast form.

Those species which retain a permanent divergence from the normal standard, such as *togata* (6) or *lemniscata* (16), are doubtless descendants from a normal type which has varied, and in which a variety has become isolated and perpetuated itself.

One result of an examination of my species with ideas here explained has been the discovery that *C. lunalonga* Schaupp is merely a variety of *pusilla* with markings a little better defined. Specimens before me establish the lead very distinctly.

In view of all the facts here presented the question might be asked, why do some species vary while others do not? While this matter is worthy of some thought, it is not possible to give a satisfactory answer. Some species doubtless vary from climatic causes. A notable instance will be seen in *hæmorrhagica*, which extends from San Diego and Yuma in California northward to the head-waters of the Yellowstone, passing through about all possible varieties of climate and habitat, from sea-coast to mountain. On the other hand *hirticollis* occurs from Hudson's Bay to Arizona without variation, and the specimens of *lepida* from the New Jersey shore are not separable from those found in Nebraska. It seems hardly possible to make any generalizations on the subject. Doubtless the coast species vary to a greater extent taking them collectively than do the inland species; but it is impossible to go further in speculation as too many exceptions arise on all sides.

The subject of variation might be considered at much greater length with profit and more fully illustrated, but the desire to bring the article within NEWS limits has caused me to be brief.

The figures have been drawn to illustrate markings only, and no regard has been had to the form of the elytra, which varies considerably, and would introduce an element not pertinent at this time.

Should the method of thought which gave rise to the preceding remarks produce in some others thoughts as to the possibilities of variation, not only in color, but almost equally in form and sculpture there would be less synonymy to be corrected and a more truly scientific basis established for species.

EXPLANATION OF PLATE.

1.—*C. vulgaris*
2.—*C. generosa*
3.—*C. generosa*
4.—*C. pamphila*
5.—*C. limbata* ||
6.—*C. togata*
7.—*C. gratiosa*
8.—*C. canosa*
9.—*C. tenuisignata*
10.—*C. marginipennis*
11.—*C. Hentzii*
12.—*C. sexguttata*
13.—*C. hæmorrhagia*
14.—*C. splendida*
15.—*C. imperfecta*
16.—*C. lemniscata*
17.—*C. Gabbii*
18.—*C. Saulcyi*

A writer in *Engineering* says "that in sinking plumb lines down shafts the accuracy of the work is often seriously impaired by spiders attaching their webs to the lines and drawing them toward the walls, often with sufficient tension to introduce material errors in the position of the plumb bobs."

HYMENOPTEROLOGICAL NOTES.—III.

By Wm. J. Fox, Phila., Pa.

(Continued from page 11, vol. iii.)

Calliopsis abdominalis Cress.

A variety of this species occurs rather commonly in Gloucester County, N. J. It differs from typical *abdominalis* as follows: the thorax, with the exception of the tubercles and tegulæ, is entirely black; the abdomen has the base of the first segment above and base of the second only, reddish fulvous, the apical margins of segments 1—5, broadly testaceous; the male has the abdomen reddish fulvous, the segments each with a black fascia.

Numerous females and several males taken in Gloucester Co., N. J., from August 16th to September 9th, 1891.

Epeolus pusillus Cress.

E. pusillus Cr., Proc. Ent. Soc. Phila. vol. ii, p. 398, ♀.

The male of this insect, which has hitherto been undescribed, differs from the female by its smaller size; the clypeus being covered with pale pubescence; the eyes more strongly converging towards the mouth; the antennæ, first three joints excepted, testaceous beneath; tip of the abdomen reddish; nervures and stigma testaceous; the antennæ are shorter and stouter. Length 6 mm.

A male and female of this species taken in Gloucester County, N. J., August 16th and September 5th.

Epeolus compactus Cress.

This species has only been recorded from Texas, Colorado, Nevada, California. I have a specimen taken in Camden County, N. J., during May.

Melissodes fimbriata Cress.

A male specimen of this insect was taken at Cape May, N. J., on June 14th. It has only been recorded from Texas.

Zethus Slossonæ n. sp.

♀.—Black, a spot on each side of the clypeus, two transverse elongate spots behind the base of the antennæ, a dot in the eye emargination, posterior orbits, line on the collar, much narrowed and slightly interrupted medially, a large spot at the top of the mesopleuræ, two small spots on the scutellum and postscutellum, two large ones on the posterior face of the metathorax, an irregular line on the apical margin of the petiole, which extends up a little way along the sides, line on anterior femora behind, and the middle tibiæ, more or less, all yellow; the scape and following two antennal joints, the mandibles, except apex, the tegulæ, the legs, except the posterior femora medially and the coxæ, reddish brown; clypeus rounded laterally, with sparse, shallow, punctures, its anterior margin armed with three widely separated teeth, the middle tooth largest; just above the antennæ there is a strong, transverse ridge; the antennæ are situated just beneath each end of this ridge, and are therefore widely separated; front with very large, deep, in some places confluent punctures, the punctures becoming less strong on the vertex and are sparse and shallow on the cheeks. Thorax punctured as on the front, on the sides and beneath with silvery-sericeous pile; scutellum with an impressed line, the punctures sparse; postscutellum with the posterior margin produced into a strong angle; metathorax subopaque, with a medial impressed line, with a few oblique, widely separated striations towards the sides, the metapleuræ with indistinct, shallow punctures; wings fuscous, with a violaceous reflection, which is especially strong on the apical portion, brownish along the costa, stigma yellowish, nervures black, second submarginal cell very narrow at the top, the third submarginal cell broader above than beneath; legs clothed with silvery pile. Abdomen clothed with sericeous pile, the petiole much swollen medially, and is contracted before the apex, a little broader than high, and with large, sparse, punctures above, the pedicle of the second segment takes up less than a quarter of the segment, the base of the pedicle black; the remainder of the abdomen claret-brown, shining, smooth above, beneath with large, sparse punctures.

♂.—Differs from the female as follows: the clypeus is entirely yellow, the medial tooth not so large; the third antennal joint black, and is more than a third longer than the fourth, joints 10–12 reddish, the hook black; the eye emargination is narrower; the medial impressed line of the scutellum is stronger; the legs without any trace of yellow; the second submarginal cell is broader above than in the female. Length ♀♂ 16 mm.

Three specimens, one female, two males. Collected by Mrs. Annie Trumbull Slosson, near Punta Gorda, So. Florida. It is most closely allied to *Z. azteca* S., from which it differs by the transverse ridge behind the antennæ. It differs from *Z. Poeyi* S., from Cuba, by the toothed clypeus and the shorter pedicle of the second abdominal segment.

Collecting Butterflies in the Yosemite Valley.

By Harrison G. Dyar.

My wife and I spent four months of last year in the Yosemite Valley, Cal., to enjoy the grand scenery and the pure air of the Sierra Nevada and make collections of the Lepidoptera of that region, and it has occurred to me that some notes of our experiences might interest the readers of Entomological News.

The valley, as may be seen from a map, is situated on the west slope of the Sierra Nevada, and through it the north branch of the Merced River flows. The general course of the river is southwesterly at this point and it plunges over two falls called the Nevada and Vernal to a depth of about 3000 feet below the general level of the surrounding country and flows, with but slight descent, for a distance of five miles between nearly vertical walls which are, on an average, a mile apart. This cañon is the Yosemite Valley, and its level floor would be covered with fine trees and shrubs were it not for the work which is being done by those in charge of the valley, who, I am sorry to say, have already succeeded in spoiling the once picturesque beauty of Mirror Lake by means of a dam and other improvements (?).

Lepidoptera were abundant during the first part of our stay, more especially the butterflies; we found but few moths. Later in the season they became much less common, and it was more and more difficult to obtain larvæ as nearly all the small plants died by reason of the dry season which set in soon after we arrived. We collected forty-nine species of butterflies, but not all were found on the floor of the valley. *Papilio rutulus* and *P. eurymedon* were common, but *P. indra*, which is a true mountain species, and occurred about the edge of the valley at an altitude of 7000 feet above the sea, was seldom seen there, although a few examples wandered down. *Neophasia menapia* was common towards the end of Summer flying slowly about the tops of the *Pinus ponderosa*, or alighting on flowers. *Pieris beckerii* and *P. sisymbrii* were found in considerable abundance on the summit of Cloud's Rest, a peak 10,000 feet high, overlooking the valley, but I did not see them elsewhere. Several species of *Anthocharis* occurred, but not in the valley proper. *A. lanceolata* was found on the talus at different altitudes, but they did not appear in the valley, and it is surprising how closely they confined themselves to the rocks, as if aware that the marbled colors of the lower surface of their wings were only fitted to harmonize with the gray granite of the broken rocks. The ubiquitous *Colias eurytheme* was to be seen all Summer, and I captured one male specimen of *C. behrii*, to which I shall again refer. *Danais archippus* was not uncommon, and two eggs of this species were found on a wild gooseberry bush, where they had been laid apparently by accident (there was no milkweed near). The larvæ that hatched from them refused gooseberry, and would certainly have died had I not supplied them with their ancestral food. Of *Argynnis*, three species occurred, *A. epithore* in the Spring, followed by what is probably *A. monticola*, though there seemed to be two very closely allied forms, perhaps only varieties, in one of which the marginal spots on the lower side of hind wings were narrower than in the other and sometimes slightly touched with silver. Both these forms were taken *in coitu* and always with a mate of the same form. *A. leto* appeared still later, the first male being seen July 10th, and first female July 21st.

Of the other species captured, I will notice only the most interesting. *Lemonias virgulti* was common in the Summer on flowers and sage brush bushes, more especially on the talus around the valley and above Vernal Fall.

Thecla grunus occurred in swarms around the live oak trees (*Quercus chrysolepis*) first appearing about July 1st and continuing all Summer. The full grown larvæ were found in abundance on young shoots of this tree about the first of June. *Pyrgus ericetorum* was seen on only one day when we captured several examples feeding on the flowers of the Pussy's Paws (*Spraguea umbellata*), but saw none afterward, though we went to the same place the next day.

About the middle of September, after nearly all my larvæ had stopped feeding, we took a trip to the high Sierras to climb Mt. Lyell, a peak 13,000 feet high. We left Yosemite on hore-back with Mr. J. B. Lembert, as guide, who owned a small farm at Soda Springs, high in the mountains, near the head of the Tuolumne River before the place was included in the National Park. On September 20th we made the ascent of the peak, and when about a quarter of the way up on a spur of the mountain overlooking the end of the glacier, a specimen of *Colias behrii* was started up which I succeeded in capturing. No more were seen that day as the weather soon became threatening, and by the time we reached the top of the glacier, the clouds had begun to float in over the peaks. On another day, September 22d, we went to some mountain meadows, 10,000 feet high, where Mr. Lembert had formerly seen some of the "little green butterflies" (*C. behrii*), but met with no success, and were obliged to return almost immediately in a dense snow storm.

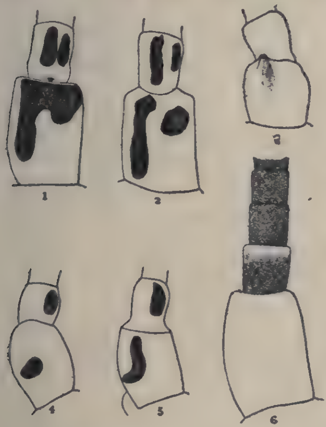
When we returned to the valley after a day's ride from Soda

Springs, I found that most of the larvæ, which had not ceased feeding when I left and which I had tied out in bags on their food-plants, had been cut off and destroyed by a crazy Indian, called "Loco" by the children of the valley. This made a rather disastrous ending to an otherwise quite successful collecting season.

ON THE SPECIES OF ŒCANTHUS Serv.

By Chas. A. Hart, Champaign, Ill.

Although the snowy, or tree cricket is commonly referred to as *Œcanthus niveus*, there are three or four species quite common and widely distributed, one of which, *Œ. fasciatus*, is in this State (Illinois) more abundant than *niveus*. I have just had occasion to examine a large series of specimens in the collection of the Illinois State Laboratory of Natural History including all the species yet recorded from Illinois. After a fairly satisfactory assortment of the specimens with the aid of the characters indicated by Prof. Jerome McNeill in "Psyche," vol. vi, p. 6, I noted that the coloration of the antennæ in each species had a perfectly distinct and invariable pattern of its own in all specimens examined. This character is not affected by sex, and seems to be the most reliable and ready means of separating the species. Some of these changes of pattern were noticed by Dr. Fitch in his description of *Œcanthus niveus* (Third Report on Insects of N. Y. p. 95) as characterizing varieties of that species, but the specific identity of these forms seems now well established.



[EXPLANATION OF CUT.]

Basal joints of antennæ of *Œcanthus*, under surface. (The difference in the sutures is due to the changing appearance of the sutural membrane in different positions of the antennæ) 1 and 2, *Œ. fasciatus*; 3, *Œ. bipunctatus*; 4, *Œ. niveus*; 5, *Œ. angustipennis*; 6, *Œ. latipennis*.

Œ. bipunctatus De G. has the apex of the scape prolonged beneath, forming an acute blackish tooth. The fore wings are conjointly marked with a fuscous spot near middle, and a large basal spot.

Œ. fasciatus Fitch, presents an extraordinary range in depth of color, without, however, any actual change of pattern. In the palest specimens, approaching *niveus* in color, the scape has on its under surface an inner black longitudinal line, straight, or with the basal end turned slightly outward. Exterior to this and near the apex of the joint is a black dot. The second joint has a similar pattern. The flagellum is luteous or olivaceous, never annulated with darker wings exteriorly as in *angustipennis* and *niveus*, though the sutures are often slightly paler. The legs vary correspondingly from pale greenish to black. As the color deepens, the outer dot in the antennæ coalesces with the end of the line, forming Dr. Fitch's var. *b*. The lines also thicken, the dot enlarges, the black extends around the apex, and from the dot toward the base, until the antenna becomes entirely black. This species has strong hind tibial spines, the last joint of the maxillary palpus is clavate, and the fore wings in the male are wider than in *angustipennis*.

In *Œ. angustipennis* Fitch, the scape has on its under side a longitudinal black vitta, the basal end of which curves distinctly inward; the second joint has a black oval spot beneath. The flagellum is pale, the outer part annulated with brownish at the tips of alternate joints. This species is also known by the very narrow fore wings of the male and the weak spines of the hind tibia.

Our palest species is *niveus* De G., which is almost colorless, but in all specimens seen possesses a nearly circular black spot on the under side of the first and second joints. The flagellum is pale, usually annulated as in *angustipennis*. The tibial spurs are as in *fasciatus*, and the fore wings are moderately broad.

Our largest species, *Œ. latipennis* Riley, lacks any distinct markings on the first two joints. The flagellum is decidedly suffused with reddish brown basally, but the outer portion is not annulate with darker. The male has the fore wings slightly wider proportionally than in *niveus*.

Fasciatus was very abundant this fall along the roadsides; *niveus* and *angustipennis* were taken this Summer at sugar in the evenings; our specimens of *latipennis* are all from the southern part of the State.

"I wish I was human," said the centipede. "It would ruin you," returned the cricket; "just think of having to buy shoes for yourself."—*New York Herald.*

ELEMENTARY ENTOMOLOGY.

LEPIDOPTERA–HETEROCERA (Moths).

By Prof. John B. Smith, New Brunswick, N. J.

All the Heterocera are commonly termed moths, and moths as distinguished from butterflies rarely have a distinctly clubbed antennæ, and do not usually carry the wings upright, the upper surfaces opposed, when at rest. In some of our Geometridæ the wings are sometimes carried butterfly fashion, but here there is no trace of a club to the antennæ, and where the antennæ might be called clavate, the posture of the wings is distinctly decumbent. The term "heterocera" means variously horned, and, indeed, all kinds of variation in antennal structure is found in the series, save that in American forms there is no distinctly clavate type represented. The terms expressive of antennal modifications are best explained when the necessity for their use arises.

Perhaps the most important character for the higher divisions is found in the venation, and under our present system a knowledge of this is absolutely essential to a proper understanding of relationships, or to enable an insect to be referred to its proper family. Experience brings a certain knowledge of superficial appearances which serves to place most specimens, but even experienced lepidopterists have been not infrequently misled by trusting too much to such appearances. Wings can be prepared for the study of venation in various ways. On larger moths a deft operator can remove enough of the scales with a camel's-hair brush to enable him to make out the course of all veins readily. Smaller moths, where the wings are for temporary use only, can be soaked for a few minutes in carbolic acid, which will render all but the veins transparent. The wings may be afterward thrown away or mounted in balsam without further preparation. Where permanent specimens are desired the wings are first placed in alcohol a few moments to extract grease, then placed in a saturated solution of chloride of lime until all color disappears. They are then washed in clean water, dried, and are ready to mount on cards with gum, on slides with balsam, or in any other way fancy dictates. Where rapid bleaching is desired, a drop or two of hydrochloric acid to the chloride of lime solution will liberate chlorine gas and cause an almost instantaneous bleaching. It will also cause an odor that will drive well disposed persons out of the room, and will further, unless watched carefully, eat into the membrane of the more delicate wings. My practice, when I want rapid results, is to get the wings into the lime solution, set the dish on the window-sill *outside*, drop in my acid, and close the window until chemical action ceases. The wings are then ready for study. It is by no means necessary to go through this process with every new form. When the general course of the veins is known a few scales removed on the underside, at the right spot, determines the matter. Where a wing is mounted in balsam after bleaching, great care must be exercised lest weak veins be rendered so transparent that they are overlooked, and folds must not be mistaken for veins. A fold is often much more distinct than a vein, but looks solid, with irregular edges, while a true vein has clean cut edges and is a tube. For forty years even the best European students had mistaken a fold for a vein in some *Zygænidæ* until I pointed out the error, and on the other hand I was caught napping and failed to see a true vein in *Cerathosia* because made too transparent in balsam.

If I have been somewhat diffuse on the subject of preparing wings for study, it is only because in venation we have the key to the present classification, and without it determination of family is guess work, more or less correct according to the experience of the guesser.

In a normal heterogeneous wing the primaries have 12, rarely 13, the secondaries 8 veins. On the secondaries the number may be increased to twelve or reduced to four, and it is in the secondaries that we find some of our most useful characters.

In the next paper the usual type of venation will be figured and described.

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Some of the Insects collected at Jamesburg, N. J., July 4, 1891.

HYMENOPTERA.

By W. J. Fox.

(The rarer species.)

Elis 4-notata
Pompilus fuscipennis
Pompilus virginicus
Trypoxylon tridentatum
Odynerus birenimaculatus

DIPTERA.

By C. W. Johnson.

Pachyrrhina incurva
Tipula fasciata
Chrysops vittatus
“ univittatus
“ callidus
“ niger
“ fallax
“ flavidus
“ obsoletus
Therioplectes trispilus
Leptogaster favillaceus
Stichopogon trifasciata
Dasyllis tergissa
“ flavicollis
Erax furax
Proctacanthus rufus
Bombylius atriceps
“ sp.
Anthrax lateralis
Argyramæba analis
Geron macropterus
Psilocephala albifrons
“ pictipennis
Psilopus scobinator
“ patibulatus
Syrphus americana
Sphærophoria cylindrica
Eristalis dimidiata
Mesograpta geminata
Platychirus hypoboreus
Xylota anthereas
Rivellia conjuncta
Tephronota humilis
Colobata antennipennis
Lauxania obscura
Trypeta bella
Sapromyza compedita

COLEOPTERA.

By Philip Laurent.

(Those species marked † were quite common.)

Cicindela punctulata†
Gyrinus lugens ? †
Dineutes vittatus†
Coccinella 9-notata†
Scymnus terminatus
Melanotus cribulosus ?
Limonius basillaris
Agrilus ruficollis
Brachys ærosa
Lucidota atra ? †
Pyropyga nigricans †
“ decipiens
Photuris pennsylvanica
Chauliognathus marginatus†
Podabrus rugulosus†
Telephorus scitulus†
Collops 4-maculata
Onthophagus hecate†
Serica trociformis
Anomala lucicola†
“ oblivia
Strigoderma pygmæa
Chlamys polycocca
Cryptocephalus venustus†
“ congestus
Pachybrachys binotatus
“ atomarius
Chrysochus auratus†

Paria 4-notata
" aterrima
Graphops pubescens
Colaspis flavida
" costipennis (rare)
Diabrotica 12-punctata†
Haltica foliacea?
Dibolia ærea
Odontota dorsalis
Cistela sericea
Mordella scutellaris†
Macrobasis unicolor†
Eugnamptus angustatus†
Pterocolus ovatus
Læmosaccus plagiatus
Centrinus scutellum-album
Eurymycter fasciatus (rare)

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

ON a Continental forty-five dollar bill, issued on the 14th of January, 1779, is represented an apiary in which two beehives are visible, and bees are seen swarming about. The motto is "*Sic floret Respublica*—thus flourishes the Republic." It conveys the simple lesson that by industry and frugality the Republic would prosper.—*Harper's Monthly*.

Dr. GEO. D. HULST has donated his collection of Lepidoptera to Rutgers College. He will retain for the present the families in which he is working, but everything else goes to the college. The collection is one of the richest in *Catocala*, and contains a very large number of types in the Geometridæ and Pyralidina. There are nearly 2500 named species and much undetermined material, some yet undescribed.—J. B. SMITH.

FOOD-PLANTS OF LIMACODIDÆ.—So far as I have observed, the larvæ of moths of this family feed on the leaves of nearly all, if not all, deciduous trees and shrubs, and readily change from one food-plant to another. This is in accord with the observations of Dr. Kunze (ENT. NEWS, vol. ii, p. 208) on *Parasa chloris*, as it will be noticed that all the plants mentioned are deciduous trees, except the Bayberry (*Myrica cerifera*), which is a shrub.—HARRISON G. DYAR.

"I HAVE never looked at this lovely thing (*Papilio marchandii*) with its delicate form and brilliant hue, without my thoughts reverting to the long past builders of the temples and altars of Palenque and Copan; the butterfly flitted through the tropical groves in their day, as now, but the inhabitants of the old dead cities have passed away, their names, their history unknown! Birds, reptiles and insects now alone tenant the forest where once stood the populous cities, the kings and priests of which, with their slaves, sycophants, long ages ago have gone to rest; naught remains of their past greatness but the moss-coated and time-worn ruins of altar and idol, and the frail, golden butterfly hovers, suspended in mid-air, over the monster face of some fallen dagon, which far back beyond even 'the night of time,' received its meed of human sacrifice; in imagination, we can see the temples restored, the long train of devotees, all the paraphernalia of pagan worship, we can hear the sound of music, the shrieks of the agonized prisoner about to be offered as a propitiation to some monstrous conception of barbaric superstition; but all now is hushed; priest, cacique and victim alike, are gone, fallen are the idols, giant trees grasp with their roots the ruins of the temples, and creeping vines and gorgeous flowers mingle with the sculpture of the marvelous shrines; scarce a sound is heard save the rustling of some snake gliding stealthily to its hole, or shimmering lizard running over leaf or twig." (Lepidoptera, Rhopaloceres and Heteroceres, H. STRECKER.)

LIST OF DRAGONFLIES taken at Lake Quinsigamond, Worcester, Mass., during the seasons of '89 and '90.

1. *Calopteryx æquabilis* Say
2. *Argia putrida* Hag.
3. *Ischnura verticalis* Say
4. *Enallagma Hageni* Walsh
5. " *civile* Hag.
6. " *signatum* Hag.
7. *Nehalennia irene* Hag.
8. *Lestes hamata* (Hag. 1862)
9. " *rectangularis* Say
10. " *vigilax* Hag.
11. " *unguiculata* Hag.
12. " *forcipata* Ramb.
13. *Anax junius* Dru.
14. *Æschna janata* Say
15. " *constricta* Say
16. " *verticalis* Hag.
17. " *heros* Fab.
18. *Neuraschna vinosa* Say
19. *Gomphus exilis* Selys
20. " *spinosus* Selys
21. *Cordulegaster maculatus* Selys
22. *Macromia illinoensis* Walsh
23. *Cordulia semiaquea* Burm.
24. " *princeps* Hag.
25. " *cynosura* Say
26. *Libellula exusta* Say
27. " *quadrimaculata* L.
28. " *pulchella* Dru.
29. " *quadrupla* Say
30. " *incesta* Hag.
31. *Celithemis eponina* Dru.
32. " *elisa* Hag.
33. *Plathemis trimaculata* De Geer
34. *Mesothemis simplicicollis* Say
35. " *longipennis* Burm.
36. *Leucorhinia proxima* Calv.
37. *Diplax costifera* Uhler
38. " *rubicundula* Say
39. " *semicincta* Say
40. *Perithemis domitia* Dru.

They were identified by Miss Wadsworth, of Hallowell.

E. F. HITCHINGS, Bucksport, Me.

THE most beautiful as well as pleasing emblem among the Egyptians was exhibited under the character of *Psyche*—the Soul. This was originally no other than a butterfly, but it afterwards was represented as a lovely female child with the beautiful wings of that insect. The butterfly, after its first and second stages as an egg and larva, lies for a season in a manner dead, and is enclosed in a sort of coffin. In this state it remains a shorter or longer period; but at last bursting its bonds, it comes out with new life, and in the most beautiful attire. The Egyptians thought this a very proper picture of the soul of man, and of the immortality to which it aspired. But they made it more particularly an emblem of Osiris, who having been confined in an oak or coffin, and in a state of death, at last quitted his prison and enjoyed a renewal of life. This symbol passed over to the Greeks and Romans, who also considered the butterfly as the symbol of Zephyr.—*Cowan, Curious Facts.*

WINTER INSECTS.—On a Winter day, when the sere landscape is enlivened by an unclouded sun, let his genial rays tempt the reader to a stroll in the Pennsylvania woods. He may be cheered by no bird song; no plants except a few evergreen leaves may brighten his path, but insect life will be there to welcome him.

Those merriest of dancers, the gnats, come forth from the moist earth at the call of the sun. Mosquito-like, they have passed their immature life in the water, and the cases of the little wrigglers are ready to burst open and liberate the winged insects whenever the sun peeps forth from the clouds. This may occur on a sunny day, even when the temperature of the air is far below the freezing point.

Arctic explorers tell us that as far North as they have gone, away up in the icy fields of Greenland, even where there is no vegetation, these gnats, or species so closely resembling them that only naturalists can detect the difference, are found dancing on wing in the sunlight or clinging to the sides of boats and sledges.

As we continue our walk through the Winter woods we turn over a log and find crawling about beneath it small, black beetles, a few tough-skinned, hard-headed grubs, and now and then a spider. If the sun shines brightly, even though snow may lie deep on the ground, wasps will be tempted forth from crevices of bark in which they have lain dormant with the cold, and after becoming thoroughly warmed they will take wing through the woods.

A butterfly known as the Mourning Cloak, richly dressed in brown and blue velvet, bordered with gold, comes forth from its snug retreat when the Winter sun is bright and wings his way through the woods as gayly as he would in mid-summer. His hiding-place has been in the wind-cracks of an old chestnut tree or a bunch of clinging leaves. He may be seen flitting about even when the snow lies several inches deep. Far off in the Rocky Mountains and among the Alps of Switzerland butterflies of various species may often be seen flying over the snow and glacier ice.

If we displace the rustling leaves that cover the ground in the woods we notice now and then a large black beetle running quickly from under our feet. If snow is on the ground we shall not see him, but in its absence we shall find him even on the coldest day. He evidently knows where to hide himself when the unwelcome snow and ice appear.

This torpor of insects is a very different condition from the hibernation of warm-blooded animals, such as the bear and the marmot. In the latter a slow and feeble circulation and respiration are kept up, and the creature lives on the fat that had been stored up in its body before the Winter sleep came on.

Different insects are affected by cold in very different degrees. Many, like the common house-fly, become torpid before the temperature falls to the freezing point. Long before frost comes they succumb to the moderate cold of autumn. There is no doubt that severely cold Winters are attended with great loss of insect life, which in a milder season would have survived.—S. F. A. in *Philadelphia Times*.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Address all packages to ENTOMOLOGICAL NEWS, Academy Natura Sciences, Logan Square, Philadelphia, Pa.

Insects have been named for W. W. Newcomb, Henry C. Denslow, Geo. Miller, D. S. Harris, W. M. Hill, J. H. Talmage, J. H. Bomberger.

ON SENDING INSECTS BY MAIL OR EXPRESS.

We receive so many insects in a broken condition, especially those sent to the NEWS for determination, that we think a few words on packing and transportation will be appropriate. We also think we should receive some reward for our trouble in naming and not be compelled to drop the specimens in the waste basket. **Never send pinned or spread specimens by mail in a single box without an outer cover.** Have the box which is to contain your specimens as light in weight as is consistent with strength; a good plan is to glue little square uprights in each corner of the box and it will then stand much pressure. Have the bottom of the box lined with quarter inch cork and drive the pins well in; should one heavy specimen loosen it will ruin all the rest. Have the size of box proportionate to the number of your specimens, and pin them in as closely as you can without injury. This box should then be placed in a larger one and the space between the two filled with some springy material such as hay, cotton, excelsior packing, etc., **loosely packed** in. **Don't** use an outer box **without having sufficient space between it and the inner,** as it is a waste of time and money as it will be useless. **Don't** pack the springy material so tightly between the two that it is useless as a preventive of jarring. Don't have them come in contact on one side or on the bottom. If the specimens are many and the box large, send by **express.** Small packages may be sent in comparative safety by packing the box containing your specimens in a large amount of excelsior cotton, etc., loosely around the box and then making into a bundle by enclosing the whole with hardware paper or other strong and heavy paper; in this way the postage on the heavy outer box is saved. It is a good plan to always put a nice layer of raw cotton over the cork, but never put this over the top of the specimens. When sending Coleoptera with heavy bodies, or moths, always secure the body by a wisp of cotton, which should be put on as follows: Take a wisp the required length and tease it out about one-half inch in width; run the pin through on end and give it a couple turns around the pin so that it holds tightly and lies close to the place where the pin issues from the thorax, then bring it around the end of the abdomen and then fasten to the pin above by a couple of turns. If the bodies are very large, as in the Sphinges, a pin should be placed on either side to prevent them swinging around on the pin. Always remember if one becomes loose it ruins many, and that "one fine, faultless specimen is worth no end of trash." Neuroptera Odonata should always have a **bristle passed through the abdomen** into the thorax when fresh, otherwise they are almost always broken off in transportation. Always put your name and full address on the box.

Entomological Literature.

HARDWICKE'S SCIENCE GOSSIP (London), December, 1891.—An introduction to the study of British Diptera, E. Brunetti, figs. European butterflies, R. B. P.

ANNALS AND MAGAZINE OF NATURAL HISTORY (London), December, 1891.—On the structure of the ocelli of Lithobius, V. Willem.

MONOGRAPH OF ORIENTAL CICADIDÆ by W. L. Distant. Part iv, pp. 73-96, pls. 7-9.* London, Calcutta, Berlin, September, 1891.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Nov. 7, '91.—Causeries Odonatologiques, No. 5: Two new groups of Agrionina from Madagascar, *Nesolestes* and *Nesocnemis*,* E. de Selys Longchamps. Note on *Amara convexior* Steph. or *continua* Thom., A. P. de Borre.

CANADIAN ENTOMOLOGIST, December, 1891.—List of writings of the late Henry Edwards, W. Beutenmüller. [This list does not contain Mr. Edwards' paper "Inguromorpha Slossonii Hy. Edw.," published in ENT. NEWS, vol. ii, pp. 71-72, April, 1891, and which was probably the last he ever wrote.] A catalogue of the Thysanoura of North America, A.

*** Contains new species other than North American.**

D. Macgillivray. The genus *Packardia* G. & R., H. G. Dyar. Descriptions of some butterfly larvæ from Yosemite—iv., id. On *Catocala flebilis* and *C. fratercula*, A. R. Grote. On some British Columbia Coleoptera, Rev. J. H. Keen. Notes.

Entomologische Nachrichten (Berlin), xvii, 23, December, 1891.—On the capture and preparation of Gallflies, E. H. Ruebsaamen. On a *Syrphus* developing on *Cirsium*,* C. Verhoeff. *Rhizotrogus ater* and *fuscus*, a reply to Dr. Kraatz, E. Brenske. No. 24, December. On German Psocidæ, H. Tetens.

Mittheilungen der Schweizerischen Entomologischen Gesellschaft. viii, 8, Schaffhausen, December, 1891.—Some new Orthoptera,* A. Pictet and H. de Saussure; *Pharmacus* n. gen.; two new species of *Gryllacris* are described from "America!" Description of some new Snout Beetles,* Dr. G. Stierlin. Description of an unpublished species of the genus *Anaspis* Geoffroy,* M. Guillebeau. Coleoptera Helvetiæ, pp. 225–256, Dr. G. Stierlin.

The Entomologist (London), November, 1891.—*Tortrix donelana* Carpenter, R. South. The Diamond-back moth (*Plutella cruciferarum*), J. Arkle. Captures at the electric light, R. Adkin. Notes on the synonymy of noctuid moths, A. G. Butler (includes some N. American species). Coleoptera collected by Mr. Pratt on the upper Yang-tsze-kiang, and on the borders of Tibet, 2d notice,* H. W. Bates.—December, 1891. Early stages of *Argyrolepia maritimana* Guen., G. Elisha, 1 pl. Insect pigments, T. D. A. Cockerell. Rearing *Limenitis sibylla* and *Pararge egeria*, J. H. Fowler. Cure for the ravages of the larvæ of *Nematus ribesii* and *Abraxas grossulariata*, J. N. Still. Reunion between the same moths, R. Adkin.—January, 1892. Mr. Butler's notes on synonymy of North American Noctuidæ, J. B. Smith. Local British lists, notes and captures.

The Entomologist's Monthly Magazine (London), November, '91.—Entomological notes from Port Darwin, J. J. Walker. Note on three Australian Carabidæ,* H. W. Bates; *Eurylychnus* n. g. Sexual characters in the palpi of *Mordellistena abdominalis* F., G. C. Champion. Notes on the British species of *Haltica*, J. Edwards. Further remarks on the genus *Eugaster* Serville,* W. F. Kirby. Life-history of *Hypsipetes ruberata*, N. M. Richardson. Addition to the list of British Hemiptera, E. Saunders. An earlier name for *Tinagma betulæ*, H. T. Stainton. *Micropteryx caledoniella*: another new species, probably from birch,* A. F. Griffith. Notes on *Eupœcilia sodaliana* Haw. (*amandana* H. S.), with description of the larva, W. G. Sheldon. Some new, etc., Lepidoptera from Chili, W. Bartlett-Calvert.—December, 1891. Life-history of *Plutella annulatella* Curt., N. M. Richardson. A new genus of Histeridæ, G. Lewis; *Epiechinus*. An Asiatic *Psychopsis* (*Ps. birmana* n. sp.),* R. McLachlan. A new species of *Aleurodes*,* J. W. Douglas, figs. Anno-

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*** Contains new species other than North American.**

tated list of British Tachinidæ, R. H. Meade. Change of habit induced by local conditions, R. McLachlan.—January, 1892. Stylopized bees, R. C. L. Perkins. Neuroptera observed in the Channel Islands in September, 1891, R. McLachlan. Two new British Hemiptera, E. Saunders. On a toad killed by the larvæ of blow-flies, L. G. Guthrie. Observations on Coccidæ, A. C. F. Morgan. Double-broodedness: whether influenced by the state of the food-plant?, F. Merrifield. Local British lists, notes and captures.

ANALES DE LA SOCIEDAD CIENTIFICA ARGENTINA, xxxii, 5, Buenos Aires, November, 1891.—New Hymenoptera of the Argentine and Uruguayan faunas,* Dr. C. Berg (continued); *Procleticus*, *Lobepomis* n. gen. Argentine Dipterology (Syrphidæ),* F. L. Arribalzaga (continued).

LEPIDOPTERA INDICA by F. Moore. Part viii, London, 1891, pp. 153–176, pls. 57–64.

ZOOLOGISCHER ANZEIGER (Leipzig), Dec. 14, 1891.—Remarkable development of *Lucilia sylvarum* Meig., G. Duncker.—December 28th. The reproduction of *Peripatus Leuckartii* Sanger, A. Dendy. On the embryology of insects, N. Cholodkovsky. Observations on the successive coloring, etc., of the pupal wing cases of *Vanessa urticæ* and *Io*, Dr. F. Urech.

DIE TAGFALTER-RHOPALOCERA, von Georg Semper (Reisen im Archipel der Philippinen von Dr. C. Semper. Zweiter Theil. Wissenschaftliche Resultate, v, 6) Wiesbaden, 1891,* pp. 239–270, pls. 39–46.

MONOGRAPH OF THE BRITISH CICADÆ OR TETTIGIDÆ, G. B. Buckton. Part vii,* London and New York, Macmillan & Co., July, 1891. Vol. ii, pp. 97–128, pls. 59–68.

DIE SPINNEN AMERIKAS—BRASILIANISCHE SPINNEN von Graf. E. Keyserling nach dessen Tode herausgegeben von Dr. George Marx. Dritter Band. Nürnberg, 1891. Verlag von Bauer & Raspe (Emil Kuester), 278 pp., 10 pls. Ten new genera and many new species are described in this volume which treats of the Territelariæ.

LEHRBUCH DER VERGLEICHENDEN ENTWICKLUNGSGESCHICHTE DER WIRBELLOSEN THIERE von Dr. E. Korschelt und Dr. K. Heider. Specieller Theil. Zweites Heft. Mit 315 Abbildungen im text, Jena. Verlag von Gustav Fischer, 1891, pp. 309–908. This textbook of Comparative Development-histories of Invertebrate Animals has been very favorably reviewed by Prof. E. Ray Lankester ("Nature," Dec. 17, 1891), who states that an English translation is in preparation. This second number of the special part treats of the Crustacea, Palæostraca, Arachnoidea, Pentastomida, Pantopoda, Onychophora, Myriopoda and Insecta, and concludes with general statements on the Arthropoda. The Insecta occupy pp. 761–890. To each of the above eight groups a chapter is devoted in which the respective subgroups are discussed as regards their 1, Embryonal development; 2, Metamorphoses; 3, Parthenogenesis, Pædogenesis and Heterogony; and 4, Summary of the group.

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* Contains new species other than North American.

ATTI DELLA SOCIETA TOSCANA DI SCIENZE NATURALI, vii. Processi verbali. 10 May, 1891. List of the Cicindelidæ and Carabidæ collected near Livorno by Sign. N. Stoecklin and Dr. C. Lopez, C. Lopez. Contribution to the study of the digestive tube of Arthropoda—Histological and physiological researches on the digestive tube of Qrthoptera, O. Visart.

OREGON AGRICULTURAL EXPERIMENT STATION, Bulletin No. 14, Entomology, F. L. Washburn, Corvallis, Or., 1891.

PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1891, Part III, Oct. 1, 1891.—On the Lycænidæ of the Solomon Islands,* H. H. Druce, 2 pls. On an interesting example of protective mimicry discovered by Mr. W. L. Sclater in British Guiana, E. B. Poulton, 1 pl.

BIOLOGIA CENTRALI-AMERICANA. Part xcvii, November, 1891.—Coleoptera: vol. iv, pt. 2, pp. 345–360, G. C. Champion, pls. xiv, xv; pt. 3, pp. 137–168,† D. Sharp; vol. vi, pt. 1, supplement, pp. 273–280,† M. C. Jacoby. Hymenoptera: vol. ii, pp. 153–176, P. Cameron, pl. x. Lepidoptera-Heterocera: vol. ii, pp. 9–24, H. Druce.

SOCIETE LINNEENNE DU NORD DE LA FRANCE (Amiens), 231, September, 1891.—Entomological notes [Hymenoptera], L. Carpentier.

ENTOMOLOGIST'S RECORD (London), ii, 12, Dec. 15, 1891.—Contains usual numerous notes on variations and captures of British insects.

BUTTERFLIES OF NORTH AMERICA, W. H. Edwards, 3d series, part xii, 1891.—Contains *Papilio americus*, *zolicaon*, *Chionobas Uhleri*, *varuna*.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE FRANCE (6), x, 1e Trimestre, Aug. 8, 1890.—Descriptions of new or little-known Microlepidoptera,* A. Constant, 1 pl. Lepidoptera from the voyage of M. Ch. Allaud to Assinie, West Africa, in 1886,* P. Mabille, 2 pls. Descriptions of four new Lepidoptera,* id., *Parnia* n. gen. Formicidæ from the voyage of M. E. Simon to Venezuela, 1887–88,* C. Emery. On Arachnids from Temen,*† E. Simon. Arachnids from the expedition of Comte S. Teleki in eastern equatorial Africa in 1887–88,* id. Arachnids from the Marian Isles from M. A. Marche,*† id. Bulletin of Proceedings.—2e Trimestre, Nov. 26, 1890. Orthoptera from the voyage of M. E. Simon to Venezuela,*† I. Bolivar, figs. Hemiptera-Homoptera from the same,* L. Lethierry. Contributions to the Indo-Chinese fauna (Coleoptera),*† J. Bourgeois. Description of the larva of *Entomoscelis adonidis* Pall. and the nymph of *Quedius tristis* Grav., P. Lesne, figs. Malachidæ of Europe and neighboring countries, E. Abeille de Perrin, 4 pls. (continued in the next

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*** Contains new species other than North American. † Contains new genera.**

two Trimestres). New or little-known Diptera, J. M. F. Bigot (Dolichopodi)*†. Bulletin*†: Olfaction in Lepidoptera, S. Alpheraky and in 3e Trimestre.—3e Trimestre, Feb. 25, 1891. Pselaphidæ from the voyage of M. E. Simon to Venezuela,*† A. Raffray. Essay on the classification of Pyralidæ,* E. L. Ragonot (continued in 4e Trimestre), 5 pls. Bulletin*†. —4e Trimestre, June, 1891. Supplementary note on the Coleoptera of Obock,* L. Fairmaire. Chrysomelidæ from the voyage of M. Ch. Allaud to Assinie,* E. Allard. Bulletin.*†

THE LIFE-HISTORY OF SPALGIS S-SIGNATA HOLL. by W. J. Holland ("Psyche," January, 1892, pp. 201–203, 1 pl.

ATTI DELLA SOCIETA VENETO-TRENTINA DI SCIENZE NATURALI RESIDENTE IN PADOVA, 1891.—Araneids of Lesina, G. Castelli. New species of *Phytoptus*,* G. Canestrini.

BULLETIN DE LA SOCIETE ZOOLOGIQUE DE FRANCE (Paris), xvi, 7, July, 1891. An error of sense in some insects of the family Dytiscidæ, X. Raspail.

IL NATURALISTA SICILIANO (Palermo), ix, 1, October, 1891.—On Sicilian Orthoptera, G. Riggio.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

LEPIDOPTERA.

Copæodes candida Wright, Proc. Calif. Acad. Sci. (2), iii, p. 34, S. W. Calif.

New species of Geometridæ, H. Druce, Biol. Centr. Amer. pt. xcvii.

Ulophora, *U. Groteii*, N. Car., p. vii; *Glyptocera* (type *consobrinella* Z.) p. vii; *Laodamia* (type *fæcella* Z.), p. vii; *Lætilia* (type *coccidivora* Comst.), p. viii, new genera of Phycitidæ, Ragonot, Bull. Soc. Ent. France, 1890.

New genera and species of Pyralidæ, Ragonot, Ann. Soc. Ent. France, 1890, pp. 435–546.

COLEOPTERA.

In Biologia Centrali-Americana, pt. xcvii (see *ante*), new species of *Mordillistena* and Rhipidophoridæ are described by G. C. Champion, of Rhyncophora by Dr. D. Sharp, of Phytophaga by M. Jacoby.

Chevrolati Grouvellei, Croissandeau Bull. Soc. Ent. France, 1890, p. clvi, Mex.

Temnochilodes, *T. Dugesi*, Leveille, Bull. Soc. Ent. France, 1890, p. clxxxiii, Morelia, Mex.

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* Contains new species other than North American. † Contains new genera.

HYMENOPTERA.

New species of Crabronidæ and Pompilidæ, P. Cameron, Biol. Centr.-Amer. pt. xcvii.

DIPTERA.

New genera and species of Dolichopodi, Bigot, Ann. Soc. Ent. France, 1890, pp. 261–296.

Doings of Societies.

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, Dec. 3, 1891.—Under short notes Mr. Howard recorded the capturing on the window-sill of his residence, November 16th, an active female of *Mantis* (*Stagmomantis*) *carolina* Burm., thus giving a record of occurrence later than that previously recorded by Mr. Lugger, viz., November 11th.

Dr. Marx read a paper entitled "Life-history of *Tholyphonus giganteus* Lucas," in which, after dwelling on the importance of even fragmentary records of the history of little known or rare animals, he gave an account of his having kept in confinement the young of this arachnid for over a year. The specimen came from Florida to Prof. Riley, and was, when received, in its first stage and newly hatched. It fed readily on roaches and refused flies. A description was given of the first stage and also after the first skin had been cast, which did not occur for over a year.

Discussed by Messrs. Mann, Marx, Test, Ashmead, Schwarz, Howard, Banks and Marlatt.

Mr. Pergande presented a note on the "Peculiar Habits of *Ammophila gryphus* Smith." A very interesting description was given of the actions of a female of this insect about the site of a completed and closed burrow, in which later examinations showed that she had deposited the full grown larva of *Heterocampa* (*sub-albicans* Grt.) *manteo* Doub., having first deposited an egg about mid-way of the body of the host larva. A figure was exhibited showing the larva with the egg *in situ* together with the specimen itself and an example of the *Ammophila*.

Discussed by Messrs. Fox, Ashmead, Schwarz and Marlatt.

Mr. Linell presented a note on the N. A. species of *Valgus*, in which, after a reference to the bibliography of the three N. A. species of the genus, a table for their separation was given. Discussed by Mr. Schwarz.

Mr. Banks gave some notes on *Prodidomus rufus* Hentz, a spider which has not been seen since Hentz's time. His remarks comprised a reference to the bibliography of the species, a statement of its relationship and characteristics together with a careful description based on immature specimens found in a drawer among loose papers last Summer. Discussed by Messrs. Fox, Gill, Marx, Howard and others.

Mr. Chittenden presented by title a paper on "Food-habits of Chrysomelidæ."

Mr. Schwarz called attention to a statement by Dr. M. Busgen (in the latter's work on the honey-dew of Aphids) to the effect that the honey-dew is not secreted from the nectaries as hitherto supposed, but ejected from the anus. He also referred to an interesting work recently published by C. A. Piepers on migratory movements of butterflies on the island of Java, and gave a brief resumé of the author's explanation of these phenomena which are comparable to the nuptial flight observed in other insects.

January 7, 1892.—Election of officers for 1892 resulted as follows:

President, C. V. Riley; First Vice-President, C. L. Marlatt; Second Vice-President, Wm. H. Ashmead; Treasurer, E. A. Schwarz; Recording Secretary, Nathan Banks; Additional members of Executive Committee, Wm. H. Fox, Geo. Marx and B. E. Fernow.

The retiring President, Dr. Marx, delivered his annual address on "An Introduction to a Monograph of the American Ticks (Ixodidæ)." In an introductory chapter the author drew attention to the absence of monographic works which would attract and facilitate the work of the beginners in Arachnological studies, and also the inherent difficulties in the obscurity of many of the classificatory characters. He pointed out the nature and extent of the work already done in the various groups of Arachnida and followed with a reference to the bibliography of the writings both foreign and American on the ticks of this country.

A full chapter on the morphology of ticks followed, and also extended notes on the biology of these parasites in which personal observations were recounted, showing that ticks are not necessarily parasitic on warm-blooded animals, but may reach full growth, and in fact complete the cycle of their existence on a strictly vegetable diet, and also that ticks, after being gorged with blood, may revert to vegetable food. The address was discussed by various members.

C. L. Marlatt, *Recording Secretary.*

ERRATA.

Vol. II, p. 102, line 17 from bottom for not *read* but.
" " line 15 from bottom for at most *read* almost.

Entomological News for January was mailed December 31, 1891.

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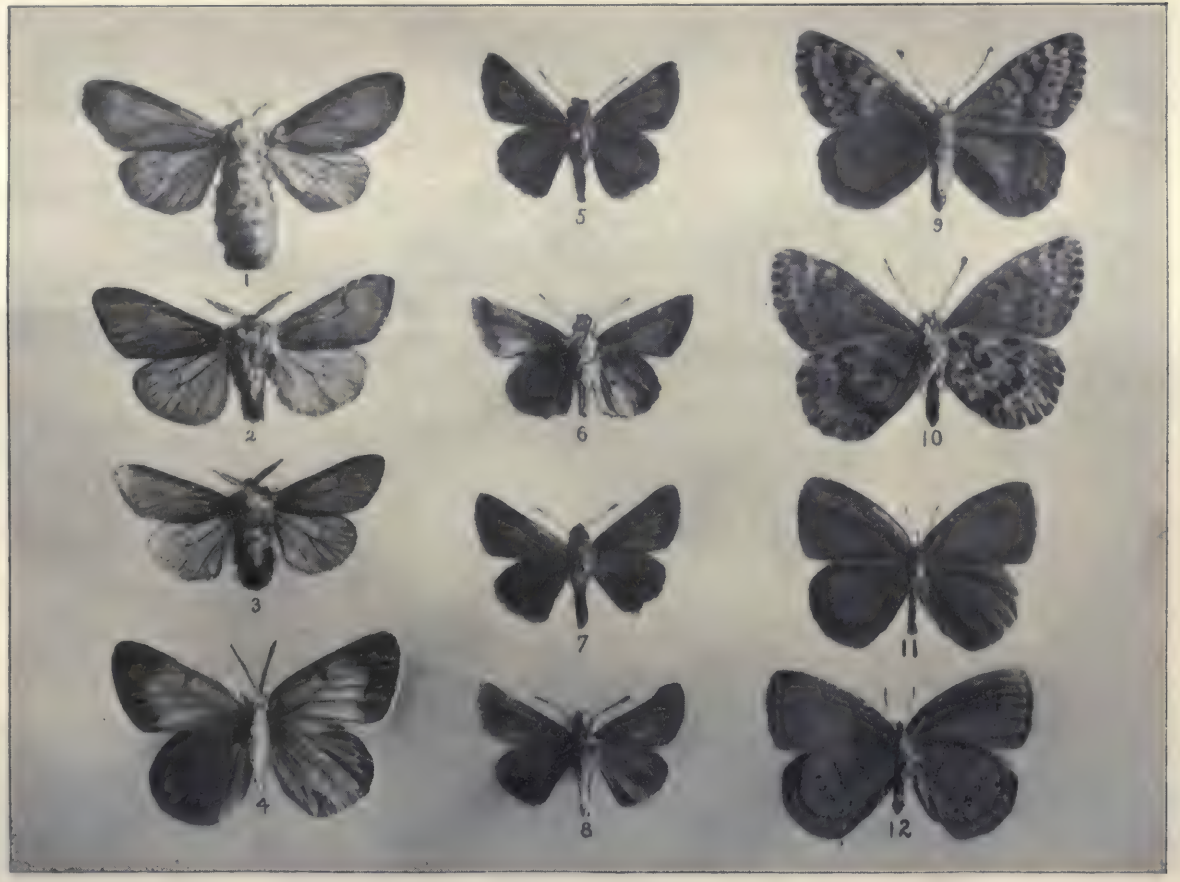
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ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. MARCH, 1892. No. 3.

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Plate II represents some butterflies and moths selected to test this method of illustration. The dark Hesperids in the centre row do not show up very well, as they needed a longer exposure than the remainder to bring out sufficient detail for proper identification. Some of the species represented are from Greenland, and will be discussed in a paper to appear in the Proceedings of the Academy of Natural Sciences of Philadelphia. The list of species is as follows: 1, *Dasychira gronlandica* ♀; 2, *D. gronlandica* ♂; 3, *D. gronlandica* ♂ var. (this species has never been in any of our American lists); 4, *Colias hecla* var. *pallida*, nom. in litt.; 5, *Pamphila zabulon* ♂ upper side; 6, same, under side; 7. *Pamphila Aaroni* ♂; 8, same, under side; 9, *Argynnis chariclea* var. *gronlandica;* 10, same, under side; 11, *Neonympha Mitchelli;* 12, same, under side.

A LONG-LIVED BASKET MAKER.

By ANNIE TRUMBULL SLOSSON, New York City.

In the early part of February, 1890, at Punta Gorda, Fla., I found a half finished "basket" of *Oiketicus Abbotii* Grt. The larva was still at work, and I took him with his uncompleted log-cabin to my room at the hotel. There, in a glass tumbler covered with a bit of mosquito netting and supplied with food and building materials, he lived and throve during the rest of my stay there. His food-plant was oak, but I have found this species upon so many different trees, shrubs and herbs, that it may be considered omnivorous. He ate freely and worked busily at the construction of his home. He was not particular as to the sort of building material, using bits of dried leaves, small twigs or leaf petioles indiscriminately. When I left Punta Gorda I carried the larva and case with me, going to Ormond and other parts of Florida. Early in April I returned to New York. The larva was then full grown and its case apparently finished. I could procure no oak leaves at that early season, so tried various other things, house plants of different kinds, and the dried leaves found in boxes of pressed figs. Of all these the larva ate sparingly, but enough to keep him alive and well. About the middle of May I went to Franconia, N. H., and of course took my case bearer along. He had, some days before I left home, suspended his basket from the mosquito netting at top of tumbler and been perfectly quiescent since. The journey by train and carriage did not disturb him, nor did he show any sign of life for several weeks after arriving in the mountains, I thought him dead or transformed, but made no examination. Under these conditions I ceased to cater for him, and he was entirely without access to food for some weeks. One day in June I took off the netting which covered the glass and forget to replace it. When I returned an hour later and took up the piece of netting the basket had disappeared. Every one in the house was questioned, but no information obtained, and I finally gave my *Oiketicus* up as lost. That evening my eye was suddenly caught by a dark spot on the white window curtain and there was my basket fastened neatly by a strong silken cord, and hanging quietly. From that time the life of *Oiketicus* was a series of surprises, and the unexpected was always happening. For weeks he would remain utterly motionless within his hanging case, then he would crawl down to some dried leaves at bottom of the glass, bite off, one after another, large semi-circular pieces and fasten them irregularly to his basket. Only at long intervals did he ever eat a particle as far as I could see, though constantly supplied with fresh food. In this way he spent the whole Summer. He traveled with me from place to place, was on the summit of Mt. Washington for several days, went to the Thousand Islands and Montreal and returned to New York in October.

In the latter part of January I went again to Florida, and *Oiketicus* accompanied me. He had shown no sign of life for nearly a month, and even the return to his native place did not at first revive him. But in a few days I saw him crawling about, and occasionally nibbling at a piece of dry leaf. Fresh food he scarcely ever tasted. Again I returned North, and again my larva came with me; after this he refused all food, but crawled about his glass prison, and from time to time added a bit of decoration to his house. Then he became quite motionless, and thus remained, hanging from the netting for some six weeks. In that state I carried him once more to Franconia. On a cold morning in early May, among the northern hills, his lagging, prolonged, creeping existence terminated, and he flew out a fine winged imago, nearly fifteen months from the day I first found him in southern Florida.

A NEW SPECIES OF COLEOPTERA FROM CALIFORNIA.

By F. E. Blaisdell, M.D., Coronado, Cal.

Scymnus lophanthæ n. sp.—Oval, slightly elongate, punctulate, pubescent. Head, pronotum, and entire under surface rufo-testaceous. Mouth parts piceous. Pronotum with a faint discal cloud occupying central portion, reaching quite to apical border; sides parallel in posterior half, arcuate anteriorly with apical angles slightly rounded. Elytra black, with a strong metallic lustre; pubescence dual, consisting of blackish, erect and recumbent flavo-cinereous hairs. Abdomen rather thickly set with semi-recumbent hairs.

Female.—Under parts testaceous. Length 2.2 mm.; width 1.7 mm.

Hab.—San Diego. There is considerable variation in the distinctness of the pronotal cloud, it may be absent or very decided. In many specimens examined the sternal and central abdominal areas were quite dark; as a rule the color is lighter in the female. My attention was first attracted to this very interesting species by Wm. Vortriede, gardener in charge of the parks at Coronado. He had observed them feeding upon the San Jose Scale (*Aspidiotus perniciosus*) infesting the *Acacia lophantha*. Subsequent observation fully confirmed his statements. The scale was exceedingly abundant, as was also the beetle in all stages of development.

NOTES ON CALLIMORPHA.

By J. T. MASON, Houston, Texas.

During the past season I learned something new, to me, about *Callimorphia LeContei,** which may be of interest to some of your readers, and if it is not out of place here, I would like to suggest that if collectors would give their various experiences in the field in non technical language, so that we unscientific readers can understand and profit by it, it would prove both interesting and instructive. I was anxious to get as many varieties of *LeContei* this season as possible for my own collection. I have over seventy, no two exactly alike, and I knew of a place in the suburbs of this city, not more than four acres in extent, where I had last year caught a large number, but all of the lemon variety. I was anxious to find the white, and a friend told me that the white came out first, and that I had missed the first brood last year; I had made a note of the date, and I commenced watching the place three weeks before the time I had set for their appearance; they showed up on time, but were all lemon as before. I caught what I wanted and then went to see my friend; he told me that he had caught his white ones at the Crosstimbers, some six or seven miles from town. The following day I drove down to the place and made a thorough search, but failed to find a single specimen. Towards evening I turned homeward, discouraged. In crossing the prairie the road passes through a few scattered pines, and while driving through them I saw one cross the road, a pure white one; I caught it and searched around there, but found no more. I had not driven over two hundred yards when another crossed in front of me, also white. I got out and searched again, and found them in quantities. Now I come to the peculiar feature: while the first were all lemon, so these were all white. I did not find, out of possibly a thousand caught, one single lemon one, notwithstanding that a few days afterwards I found another lot of lemon on this same prairie not over one mile distant from the latter, and there was no white amongst them. Now the question I ask myself is, why do the two colors keep separate? *they are undoubtedly the same moth.* Here are two separate colonies within a mile of each other, on the open prairie, absolutely no barrier between them, why do they not mingle? I caught among the lemons some that appeared to be pure white, but when compared with the white, of the white variety, they are a cream-white, and readily distinguished. I note still another peculiarity. I have, as I said before, over seventy with no two exactly like. We will take say the lemon, we have the fully marked upper wings and the markings decrease gradually until we come to the pure white, or rather cream upper wing and lemon under wing, and then the all cream, both upper and under; the same is true of the white variety, except that the pure white are by far the most plentiful. Still in all this large variety of markings or parts of them if continued would make the perfect pattern, as a friend remarked while looking at them, that they looked as if the wing originally was white and the color afterwards stenciled on, the feebly marked representing where the brush was full of coloring matter, and down through all the degrees of dashes and dots until finally we come to the one without a mark.

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* The two insects herein mentioned are *C suffusa* Smith and *C. lactata* Smith, which are probably forms of *Colona* Hbn. = *Clymene* Esp.—ED.

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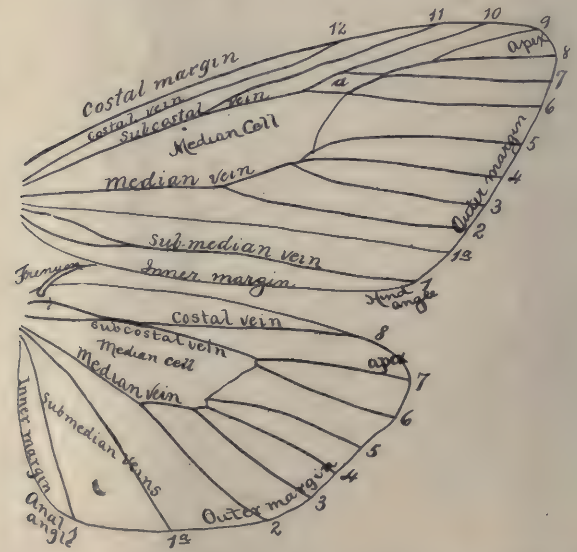
ELEMENTARY ENTOMOLOGY.

LEPIDOPTERA–HETEROCERA (Moths).

By Prof. John B. Smith, New Brunswick, N. J.

In examining the denuded wings, one of the first things noticed is, that more supporting veins reach the outer margin than reach the base; that while a very few trunks extend from the base to the margin of the wing, two large trunks start from the base, but rarely extend beyond two-thirds of the distance to the outer margin, giving off at that point a variable number of branches. These main trunks that reach the base are called veins, whether or no they reach the margin as well. The branches, which reach the margin, but do not reach the base, are called venules. Beginning at the anterior edge of the primaries we find a vein close to the thickened front margin, extending from the base to the margin always before the tip of the wing. This is the costal vein; it is almost universally present, is never branched in my experience, and has no modifications of systematic value save that there may be a cross branch extending between it and the costa. Next below the costal vein at base is the subcostal, running parallel and sometimes very close to the costal, but rarely extending much beyond the middle of the wing. This vein gives off, normally, six branches, which are called the subcostal venules. Of these, one or two usually separate from the main trunk before the end, and the others are grouped at the tip. Sometimes, to facilitate this grouping, a cell is formed around which the branches start, and this, when present, is termed the accessory cell, marked *a* in the figure. Sometimes, instead of all the branches reaching either the vein or the accessory cell, a stalk may be sent out, which in turn branches. So in the figure, branches 8 and 9 are from a stalk out of the tip of the accessory cell; 6, 7 and 10 are out of the accessory cell, while 11 is out of the subcostal itself. The accessory cell is present in comparatively few families only, and its presence or absence is of systematic value. The arrangement of the subcostal venules is also used in classification, and quite frequently some of them are wanting.

Below the subcostal at base is the median vein running parallel to, but more or less diverging from the subcostal, and extending usually about as far into the wing. The space between the subcostal and median veins is called the median cell. Quite usually a slender transverse veinlet extends from the tip of one to the tip



of the other, and the cell is then said to be closed, as in the figure. When this transverse veinlet is wanting, the cell is said to be open. The median vein gives rise to four branches—the median venules—the first of them usually some distance before the tip, the others, grouped more or less closely, from the end. The arrangement of these veins is of systematic value, and especially the position of the last of the branches, marked 5 in the figure. This sometimes severs connection with the series to which it belongs and arises, apparently out of the cross-vein; or, where there is no distinct cross-vein out of the tissue itself, and it is then called the independent. Sometimes it is nearer to 6 than to 4, but never becomes one of the subcostal series; sometimes it is altogether wanting, and it is one of the most valuable from the systematic standpoint of the venules of the primaries.

Below the median vein at base is the submedian, extending parallel with the hinder or inner margin to the anal angle. It is rarely absent, and never branches. It sometimes becomes forked at the base, and this furcation is given great systematic value. It is one of the distinctive characters of the Noctuidæ, and its absence would be sufficient in most cases to exclude a species not so characterized; sometimes a supplementary vein will be present running parallel with the submedian, and between it and the median. This is the second submedian, and its presence characterizes a small number of families.

This makes the normal 12, or exceptional 13 veins of the primary. For convenience they are numbered as they reach the margin, beginning at the anal angle. The submedian is number 1, the second submedian is 1*a;* veins 2 to 5, inclusive, are median branches; veins 6 to 11, inclusive, are subcostal branches, and vein 12 is the costal. The numbers are more convenient to use in descriptive work, and, as the plan is so uniform, it is quite as accurate and scientific.

Beginning at the base of secondaries, along the anterior margin we find first the costal vein, usually reaching quite close to the tip of the wing. This affords good characters. Sometimes it is entirely wanting; sometimes it is connected with the subcostal by a cross-vein; sometimes it does not reach the base at all, but unites with the subcostal, and sometimes it unites and separates again, forming a small cell at the base as in the figure.

Below the costal is the subcostal vein running parallel with it a variable distance and then forking at the tip, never into more than two branches. One of these branches may also be obsolete, and there may then be a single vein running from base to outer margin.

Below the subcostal at base starts the median vein, and this in its branchings is exactly like the corresponding vein of the primaries. The median cell is also formed in the same way, and may also be either open or closed. As in the primaries, vein 5, the last branch of the median, is very variable in position, and furnishes good characters. Below the median there may be one, two or three submedian veins, and these furnish bases for large divisions. The *Tortricids* and *Pyralids*, for instance, all have three internal or submedian veins, while the *macros* rarely have more than two. Sometimes one or the other of these veins forks at the base, and this also is a good character. Counting all the median veins as one, the secondaries have eight veins, the subcostal system being little developed as compared with the primaries. Here also the numbering system is most generally used, the numbers in the figure being those generally adopted.

At the base of the secondaries next the primaries, there is frequently a spine or spur, which fits into a more or less evident loop on the under side of the primaries, and serves to hold the wings together. This is called the frenelum or frenum. There is a curious sexual modification in this structure. In the males it is always a single spine only. In the female it is never simple, but there are two, three, or even four weaker spines, or even a little bunch of stiff hair only.

The above is the typical venation to which all modifications found in the Lepidoptera may be reduced. A few aberrant types only, like the Hepialidæ and Psychidæ, will need special explanation.

(To be continued.)

A St. Louis physician states that he has discovered peculiar microscopical insects in cigarettes. This may account for the wormy look so many of their consumers wear.—*Washington Post.*

A canary with a swollen hind toe was brought to a bird fancier recently, and he pronounced the trouble poisoning from a mosquito bite. He said the thing was not uncommon.—*New York Sun.*

AN AMERICAN SPECIES OF TEMPLETONIA.

By F. L. HARVEY, Orono, Maine.

Templetonia americana n. sp.

Mr. Macgillivray, in his recent catalogue of the Thysanourons of North America (Can. Ent. December, 1891), makes no mention of the occurrence of *Templetonia* in America. Having studied a species of this genus the first season that is quite common about Orono, Me., we record the following observations upon it:

Generic characters in every particular as recorded by Lubbock (Monograph Collembola and Thysanoura p. 142).

Specific characters.—Silvery white, sometimes pale brownish or rusty color, laid on in spots and streaks; a delicate pink reflection, especially from young specimens; clothed with silvery iridescent scales; eye patches very small, pale brown. Head nearly round, somewhat pointed in front, broadest behind and somewhat longer than broad. Antennæ white, five jointed, basal joint short, about one-fourth the length of the second; terminal joint nearly or quite as long as the third and fourth together, slender, and, in mature specimens, composed of seventeen sub-joints, the basal and terminal sub-joints each one-fifth the total length of the joint; the middle three-fifths composed of fifteen nearly equal sub-joints; in younger specimens the terminal joint seems shorter and composed of fewer sub-joints. Body elliptical and rounded anteriorly, widest at the fifth segment; first, fifth and sixth segments long, third segment short. Legs white, rather long; larger claw long and slender; elater long, basal joint four-fifths the total length. Thoracic collar of numerous bowed, club-shaped hairs; similar ones on the head, and a dense tuft of hairs projecting forward between the antennæ and reaching to the third joint; scattered long hairs on the segments of the body.

Measurements.—Total length 1.65.; head, .345 mm. long, .292 mm. broad; antennæ, .718 mm.; length of the joints in the ratio of 1-4-5-6-11; elater, .8 mm.; basal joint, .367 mm.; claw, .046 mm. long; segments of the body in the ratio of 15-10-6-10-15-13-7-3 in one specimen, and in another 11-6-2-6-8-15-5-2.

The above measurements were made from the largest specimens seen.

Remarks.—This is a smaller species than *T. crystallina* Muller. The largest ones we saw did not measure over 1.65 mm., while the majority were never over 1.5 mm., and many less. Lubbock gives the length of *T. crystillina* Muller as two and a quarter millimetres. Our specimens are not obovate, but more elliptical oblong, and widest at the fifth segment. The antennæ of Lubbock's species as figured in his monograph, are considerable more than half the length of the body and head, and quite slender. In this species the antennæ are thick and about equal to or less than half the length of the body and head. The terminal joints of the antennæ as shown in Lubbock's figure are made up of fully *twenty-five* sub-joints of about equal length; while this species has in the largest specimens only seventeen joints and a less number in smaller ones, while the basal and terminal sub-joints are as long as described above.

Some of our specimens when alive showed traces of rusty streaks and spots, but after being in alcohol for three months there is no evidence of the reddish spots said to develop under such conditions upon *T. crystallina.* Balsam specimens are a beautiful pink color. The movements of this species are sluggish, and though provided with a well developed spring it does not seem disposed to use it, unless absolutely necessary.

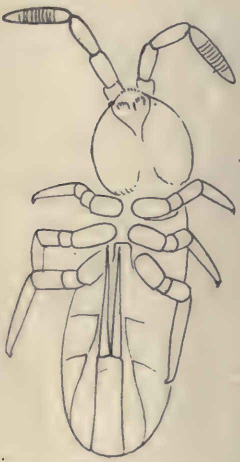


Fig. 1.

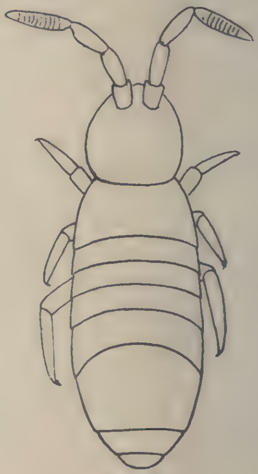


Fig. 2.

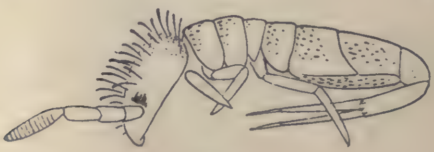


Fig. 3.

We have not examined *T. crystallina* Muller, but the smaller size, shorter, thicker antennæ with fewer sub-joints to the terminal segment, the more elliptical form of the body and the fact that it does not develop red spots in alcohol, would seem to separate this form from that species. Figs. 1, 2 and 3 represent the dorsal, ventral and side view of a young specimen 1.1 mm. long, magnified forty-five times; 1 and 2 show the general form of the body, somewhat too broad, and the terminal joints of the antennæ in all the cuts have fewer sub-joints than occur in adult specimens, and the short basal or fifth joint to the antenna does not show. The figures were made for the writer from line specimens by Mr. J. H. Emeston, of Boston, Mass.

Found under boards at several places on the college campus at Orono, also in abundance in the writer's garden in potato hills, about the tubers affected by potato scab and potato rot. Sometimes nearly a dozen would be found on a single tuber in the depressions made by the scab. Associated with *Iratonia tricolor*, *Lipura ambulous*, *Lepidacyrtis metallicus*, *Tomocerus plumbeus* and an undetermined *Achorutes*. Many specimens examined during September, October and November, '91, by F. L. Harvey.

List of Hemiptera Collected in Jamaica, W. I.

By C. W. Johnson and Wm. J. Fox.

The following Hemiptera were collected in Jamaica during April and May, 1891. Most of the species were obtained at Kingston, Morant Bay, and Port Antonio; those of common occurrence are indicated by an asterisk (*). We are indebted to the kindness of Prof. P. R. Uhler for the determination of the species, which have been placed either in the collection of the American Entomological Society, or the Wagner Free Institute of Philadelphia.

*Sephina maculata** Dallas, *Leptoglossus stigma* Herbst, *Anasa bellator* Fab., *A. scorbutica* Fab., *Aceratodes bifida** Say, *A. meditabunda* Fab., *Nezara marginata* Bv., *Aethus nigerrimus* Dallas, *Proxys victor** Fab., *Thyanta perditor** Fab., *Catorhintha guttula* Fab., *Euchistus crenator** Fab., *Mormidea pictiventris** Stal, *Zicca tæniola* Dallas, *Alydus pallescens* Stal, *Lygæus varicolor* Fab. (var.), *L. pulchellus** Fab., *L. aulicus* Fab., *L. sandarachatus** Say, *Dysdercus mimus** Say, *D. andreæ** Linn., *D. sanguinarius* Stal, *Zelus rubidus** St. Farg., *Harmostes nebu-*

losus Stal, *Corizus sidæ** Fab., *Megacœlum rubrinerva* Dist., *Lygus* sp., *Corimelæna minuta** Uhler, *Plagiognathus indistinctus** Uhler (MS.), *Pycnoderes insignis* Reut., *Collatia explicata** Uhler, *Salda humilis* Say (var.), *Rhogovelia collaris** Burm., *Parmera bilobata* Say, *P. parvula* Dallas, *Geocoris disparatus* Uhler (MS.), *Tettigonia herbida** Guér., *T. flaviceps* Riley, *T. robusta** Sign., *T. robusta** Sign. (var.), *T.* n. sp.?, *Agallia* n. sp.?, *Ormenis pallescens* Stal, *Dascalia acuta* Uhler (MS.), *Paroristes humilis** Uhler (MS.), *Bothriocerus* sp., *Copicerus thoracicus* Guér., *Centrotus havanensis* Guér. (var.), *Ophiderma scutellatus** Uhler (MS.).

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

Mr. JAMES ANGUS, of West Farms, New York City, has presented his fine collection of insects to the American Museum of Natural History.

TRANSACTIONS of American Entomological Society.—Of volume xix (1892) twenty-four pages have been printed, containing "Studies in Chrysomelidæ," by Dr. G. H. Horn, and the first pages of "A Study of Amara, s. g. Celia," also by Dr. Horn. This volume promises to be an unusually good one, and we propose to notice the progress made from month to month.

CARABUS NEMORALIS Müll.—In the Trans. Am. Ent. Soc. 1875, p. 126, I made mention of having seen a specimen of *C. hortensis* Fab. (= nemoralis *Mull.*) in the cabinet of Mr. A. Murray, of London, with the label Hudson's Bay. Being unwilling on the evidence of one not very well authenticated specimen to admit the species to our lists, no other record than that above recorded has been made. In December last I received through the kindness of Mr. Henry S. Harbeck, of New York City, two specimens of this species with the following information, which I transcribe: "While on a business trip to St. Johns, N. B., in April and May, 1890, Mr. C. B. Riker, of Maplewood, N. J., devoted his leisure time to collecting Coleoptera, and among his captures were fourteen *Carabus nemoralis*, which, as you say, is the first authentic case of its occurrence in North America. He says that the beetles were quite common and those that he took were collected in less than an hour." From this it is evident that *nemoralis* is fairly naturalized in America, and should now be added to our list and placed after *limbatus*.—G. H. HORN.

HEXAPLASTA ZIGZAG (Riley).—Although first made known as a native of the cotton-growing States, this insect is a familiar inhabitant of New England, being found during the first warm days of Spring upon the dandelion blossoms, and in July upon windows in company with two species of *Phora*. The radial cell varies in being either open or closed. The disc of the scutellum is convex.—W. H. PATTON, Hartford, Conn

NOTE ON CYCHRUS.—In the January number of ENT. NEWS, Mr. H. F. Wickham gives a note on the geographical distribution of *Cychrus*, which is very interesting, and an invitation to the readers thereof to furnish more notes on geographical distribution. This brings to my mind a little incident which may be of interest to the readers. In the early part of Spring, 1890, while collecting on an island, situated on the beautiful sandy New Jersey coast, I was pleasantly surprised by the capture of *Cychrus elevatus* Fab. I did not expect to find the genus inhabiting this locality. Although carefully searching I could only find the one. The next day, about one-half mile from where I found the first, I had the reward of capturing the second. The specimens differ very much from those found on the mainland proper, as they are minus that beautiful lustre, and the thorax is not so well developed, in all they resemble somewhat more the Pacific coast fauna. As these are the only specimens of *Cychrus* that I know of as having been found on the New Jersey coast, it is very interesting, and I should be pleased to hear if other species have been found inhabiting the islands along the coast.—H. W. WENZEL, Phila.

Mrs. A. T. SLOSSON by this time has probably started on a trip to the Southwest, taking in Louisiana, Texas, and perhaps Mexico. We suppose that many bugs in those regions will have to deliver up some of their interesting secrets.

THE *Anthophora* described by me in Bull. U. S. Geol. Surv. v, is *A. Walshii* ♀. I took *A. Smithii* in Kansas in 1881, and have received specimens of it from California. *Plistotrichia* Morawitz, is a synonym of *Anthophora;* it differs merely in the individual aberration of the venation described by me in *Anthophora* and *Clisodon*.—W. H. Patton, Hartford, Ct.

THE following has been extracted from a circular which has been sent to entomologists and others. We hope the collection may be obtained and provision made for its preservation: "Dear Sir,—An effort upon the part of a few professional and personal friends of the late Harry Edwards, to purchase and present to the American Museum of Natural History (of the city of New York) his magnificent Entomological Collection, has met with so much encouragement that the Committee in charge ventures to call your attention to the matter. A number of gentlemen have already subscribed one hundred ($100) dollars each towards the sum required, fifteen thousand ($15,000) dollars, and it is hoped that you will be willing to contribute a similar amount. The object of the movement is not only to secure for the city of New York a treasure of inestimable value, but to make smooth the declining years of the widow of our friend, and to raise to the memory of an excellent actor, a distinguished scientist and a good man, a worthy and lasting monument.

"(Signed) Edwin Booth, Jos. Jefferson, Theo. Moss, S. P. Avery, W. C. Prime, Lawrence Hutton, A. M. Palmer, Treas., 29 W. 30th St., New York City."

IN a letter from Mr. W. F. Kirby, of the British Museum, the following may interest the readers of the NEWS, premising that everybody knows that Mr. Kirby is at work on a catalogue of the Heterocera of the world. "My first volume (Sphinges and Bombyces) will run to about 800 pages, and include, I think, 28 families, some of them numbering over 200 genera. All but four are now in the printer's hands, so that I hope the publication of the book will not be much longer delayed." * * * "I have relegated the Sesiidæ to the neighborhood of the micro-lepidoptera. I doubt if you have any Heterogynidæ in America. *Heterogynis* is a small European genus with males like *Procris*, but with apterous females." Mr. Kirby's book, when published, will form one of the most useful assistants the working entomologist can have.—JOHN B. SMITH.

A BIT OF HISTORY.—Miss Morton's very interesting notes in the January number of ENT. NEWS show that there is some confusion among the names of the smaller Limacodidæ, and it may be interesting to briefly go over the literature of these forms. In 1854, Herrich-Schäffer published three figures as *Limacodes texula*, *L. pallida*, and *L. flavula*. In 1864, Packard erroneously identified a specimen in the Harris collection as *L. textula*, and, believing it separable from the genus *Limacodes*, created the genus *Isa* for it. In the same year he also described *Heterogenea shurtleffii*, and made the genus *Tortricidia* for Herrich-Schäffer's species *pallida* and *flavula*. In 1866, Grote & Robinson described *Limacodes inornata*, and in 1876, Grote created the genus *Sisyrosea* for it. Finally, in 1880, Grote described the species *Limacodes cæsonia* and *L. flexuosa*. Now, as far as I know, there are but four species for all these names. The larva of the first one was figured in Harris' "Entomological Correspondence," and has been described by Mr. Hulst and by myself. The moth was first described as *inornata*, but is the species for which the genus *Isa* was made, and should be known as *Isa inornata*. The larva of the second is unknown. It is *Heterogenea shurtleffii*, of which *cæsonia* Grt. is a variety. The larva of the third is also unknown. It is the *textula* of Herrich-Schäffer (not of Packard), and was redescribed by Grote as *flexuosa*. It should be known as *Heterogenea textula*. The larva of the fourth species is the one described by Miss Morton. It has also been described by myself, and should be known as *Tortricidia pallida* H.-S. *T. flavula* is only a variety of it, and represents the form without marks on the wings which Miss Morton describes. These species are correctly arranged in Prof. Smith's new List.—H. G. DYAR.

DRASTERIA ERICHTO.—Has this noctuid been satisfactorily identified since Gueneé's description of a single female in 1852? Some of our collections, I am aware, contain specimens labeled *erichto*, that were determined by Mr. Grote. However, specimens of our eastern *Drasteria* sent to Mr. Grote just before he left this country, and also those sent to Prof. Smith since he became our recognized authority on the Noctuids, have all been referred to *erechtea*. In 1873, Mr. Grote, in Bull. Buffalo Soc. Nat. Sci. i, p. 155, admitted that he could not separate the two species except in size, referring the specimens of the smaller Spring brood to *erichto*. Of two specimens, a ♂ and ♀, in the University collection determined by Mr. Grote as *erichto*, the ♀ proves to be an *erechtea*. I presume other collections contain similar specimens. Recently Prof. Smith wrote me that he had not tried to identify *erichto* and had not the slightest doubt that *erichto* is the same as *erechtea*. During the past year I have bred what I believe to be *erichto*. I thought I was breeding *erechtea*, but recent study and comparisons of my bred specimens and a large series of *Drasteria* caught in trap-lanterns has shown that we have two species of *Drasteria* in our eastern fauna, both about equally common I think, and differing considerably structurally and rather closely grading into each other in markings. The structural differences are marked and very constant. The genitalia of the males and the seventh abdominal segment of the females differ strikingly in size and form. I find that the species are easily separable by these characters and typical strongly marked specimens of either sex may be quite readily identified by the markings on the front wings. I hope soon to be able to illustrate some of these differences, but I desire to make further observations upon the range of variability of *erechtea*.—M. V. SLINGERLAND, Cornell Insectary, Ithaca, N. Y.

A PLEA FOR THE COLLECTOR.—Prof. J. B. Smith's list of "The Lepidoptera of Boreal America" came to hand a short time ago, and has afforded me a great deal of pleasure and instruction. If I understand it aright, this is the first complete list of the kind that has been published in this country, and I am sure that Prof. Smith and the other learned gentlemen who were associated with him in getting it up have given students of this department of Entomology a work that may be relied upon as being as near complete and correct as can be got at present. Bearing in mind the article entitled "Rocks," which appeared in the NEWS some time ago, would not this list be a good foundation for a descriptive work on the Lepidoptera of North America? Could not the gentlemen who got up this list be induced to publish a work, in monthly parts, containing descriptions and plates of the Heterocera at least, if subscribers enough could be got to ensure them against financial loss? We already have good works on the Butterflies, and they might, therefore, be left out, as also the very small moths. The plates, of course, could not be colored, except at a great cost, but plates such as have been appearing in the NEWS, with a description attached, are every bit as good. A great many who study this subject are business men who have not the time and skill to identify their specimens without the help of plates, and I take it their number would become legion compared to what it is now if such a work could be got at a moderate cost. It may be objected that such a work, when finished, would be incomplete on account of the new species that are being constantly discovered, but if we were to wait ten or even twenty years, the same objection would still hold good. In Europe, where the Lepidoptera have been studied for a great number of years, new species are still being discovered, and in spite of that a new work on the Lepidoptera of Great Britain is just being commenced in London. If you will kindly give this a place in the NEWS it may be the means of helping to make such a work as I suggest a possibility at least, if not a probability of the near future.—JAMES TOUGH, Chicago, Ill.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

NEUNZEHNTER JAHRESBERICHT DES WESTFAELISCHEN PROVINZIAL-VEREINS FUR WISSENSCHAFT UND KUNST FUR 1890. Muenster, 1891.—Observations on the occurrence of melanism among the macrolepidoptera of the vicinity of Dortmund, K. Meinheit.

LA NATURE (Paris), Dec. 26, 1891.—Influence of artificial lights on insects, G. A. Poujade; figs.

U. S. Department of Agriculture. Division of Entomology. Bulletin No. 24.—The Boll worm of cotton. A report of progress in a supplementary investigation of this insect. Made under the direction of the Entomologist by F. W. Mally, Washington, 1891, 50 pp. *Heliothis armigera* Hüb.

Revue Scientifique (Paris), Dec. 26, 1891.—Insects destructive to forests according to M. A. S. Packard, anon. A means of destroying grasshoppers according to M. Decaux, anon.

Compte Rendu. Societe Entomologique de Belgique, Dec. 5, '91.—Heterocera exotica, new genus and species from the Dutch East Indies,* F. J. M. Heylaerts; *Gnophrioides* n. gen. Melanges Entomologiques: VIII. Diagnoses of Coleoptera from the Congo,* A. Duvivier. Notes on indigenous Coleoptera malacoderma, E. Rousseau. Additions and annotations to the lists of indigenous Lamellicorn and Carnivorous Coleoptera, A. P. de Borre.

Proceedings of the Linnean Society of New South Wales (2), vi, 1. Sydney, Sept. 9, 1891.—Notes on a small collection of Hymenoptera from Narrabri, N. S. W., W. W. Froggatt. Description of a new species of Tortricidæ,* J. H. Durrant. Stray notes on Lepidoptera,* A. SO. lliff.

Canadian Entomologist, Jan., 1892.—Can insects survive freezing? H. H. Lyman. Descriptions of some butterfly larvæ from Yosemite (v), and the life-history of *Callidryas eubule*, H. G. Dyar. Revision of the Bombylid genus *Epacmus* (*Leptochilus*), D. W. Coquillett. *Hetærina americana* [in Ontario], J. A. Moffat. Canadian Galls and their occupants—*Aulax nabali* N. S., W. Brodie. Entomology for Beginners, No. 1, J. Fletcher. An explanation, A. R. Grote. *Melitæa phæton*, *Petrophora silaceata*, J. A. Moffat. Prof. J. B. Smith's list of Lepidoptera, G. H. French. Larva of *Anceryx fasciata* Swains., T. D. A. Cockerell.—February, 1892.—Entomology for Beginners No. 2, J. Fletcher. Two new Orthoptera from Indiana, W. S. Blatchley. Some Indiana Acrididæ II, id. Further notes on *Gelechia gallædiplopappi*, and description of a new species of *Bracon*, Rev. T. W. Fyles. Notes on the life-history of *Agallia sanguinolenta* Prov., H. Osborn and H. A. Gossard. On the Orthopterous fauna of Iowa, H. Osborn. How the female of *Cacœcia semiferana* protects her egg clusters, C. P. Gillette. Notes on Coleoptera No. 9, Dr. J. Hamilton. Notes on the Aegeridæ of central Ohio, D. S. Kellicott.

Annalen des k. k. Naturhistorischen Hofmuseums, vi, 3, 4, Wien, 1891.—To the knowledge of the Hymenopterous genus *Philanthus* Fabr. (sens lat.),* F. F. Kohl. Bumble-bee studies, A. Handlirsch, figs. African Lepidoptera of the k. k. Naturhistorische Hofmuseum,* A. F. Rogenhofer, 1 pl.

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* Contains new species other than North American.

HARDWICKE'S SCIENCE GOSSIP (London), January, 1892.—Famous collecting grounds for Dragonflies [by W. H. Bath].

TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1891, pt. iv, December, 1891.—New species of Heterocera from the Khasia Hills,* Col. C. Swinhoe, 1 pl., *Kalmina micronissa*, *Anthyperythra* (Warren MS.), n. gen. On some cases of Dimorphism and Polymorphism among Palæarctic Lepidoptera, S. Alpheraky. Effect of change of climate upon the emergence of certain species of Lepidoptera, G. F. Mathew. Descriptions of new species of holophthalmous Ascalaphidæ,* R. McLachlan; *Campylophlebia* n. gen. Descriptions of four new species of the genus *Fulgora*,* W. L. Distant, 1 pl. On the South American species of *Diabrotica*, appendix, C. J. Gahan.

INSECT LIFE, iv, 5, 6, December, 1891.—Wheat and Grass Sawflies, C. V. Riley and C. L. Marlatt, figs. The importation of a Hessian Fly parasite from Europe, S. A. Forbes. The origin and development of parasitism among the Sarcoptidæ, H. Garman. Origin and development of the parasitic habit in Mallophaga and Pediculidæ, H. Osborn. The use of grape bags by a paper-making wasp, Mary E. Murtfeldt. The methods of pupation among the Chalcididæ, L. O. Howard, figs. Notes on grass insects in Washington, D. C., H. Osborn. An interesting aquatic bug. Hominivorous habits of the screw worm in St. Louis, Mary E. Murtfeldt. Another spider egg parasite, L. O. Howard.

BRITISH NATURALIST (London), January, 1892.—Portrait and sketch of Lord Walsingham. Notes and lists of captures of British insects.

NEUE ODONATEN VON ECUADOR,* von Dr. F. Karsch (Reprint from Societas Entomologica vi, 14–16) *Neuragrion* n. gen.

BULLETIN OF THE ILLINOIS STATE LABORATORY OF NATURAL HISTORY, vol. iii, art. xii.—Sixth contribution to a knowledge of a life-history of certain little known Aphididæ, C. M. Weed.—Vol. iv, art. i. Bacteria normal to digestive organs of Hemiptera, S. A. Forbes.

ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE liii, 3, Leipzig, 1891. —The development of the female sexual organs of *Phyllodromia* (*Blatta*) *germanica* L., R. Heymons, 3 pls.

PROCEEDINGS OF THE ROYAL SOCIETY, l, 303, London, Jan. 8, 1892.— A new mode of respiration in the Myriapoda, F. G. Sinclair.

ANNALS AND MAGAZINE OF NATURAL HISTORY (6), 49, January, 1892. —Notes on Longicorn Coleoptera of the group Cerambycinæ, with descriptions of new genera and species,* C. J. Gahan. On some Japanese species of *Paromalus*,* G. Lewis. Descriptions of two new genera of Scorpions, with notes upon some species of *Palamnæus*,*† R. I. Pocock, 1 pl. Description of a new trap-door spider from Ceylon,* id.

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* Contains new species other than North American. † Contains new genera.

WIENER ENTOMOLOGISCHE ZEITUNG, xi, 1, January, 1892.—On the pretended present decline of Entomology, E. Reitter. Analytical revision of the European species of the Tenthredinid—genus *Schizocera* Latr.,* F. W. Konow. A new *Leptis* from Switzerland,* T. Becker. Coleopterological notes,* E. Reitter.

REVISTA DEL MUSEO DE LA PLATA, I, La Plata, 1890-91.—Argentine Dipterology [Culicidæ], F. L. Arribalzaga.

STUDIES FROM THE BIOLOGICAL LABORATORIES OF THE OWENS COLLEGE II, Manchester, England, 1890.—The pupal stage of *Culex*, Dr. C. H. Hurst, 1 pl.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE, iv, 4, January, 1892.—Study on some galls from Syria [Acarocecidæ],* Dr. H. Fockeu, figs.

NOTES FROM THE LEYDEN MUSEUM, xiii, 3, July, 1891.—Description of a new Curculionid,* W. Roelofs, 1 pl. New genus and species of the group of *Oxyopisthen*,* id. A new genus of Calandrinæ, C. Ritsema Cz. A new species of *Rhyncophorus*,* id. Two new species of the genus *Helota* from Borneo,* id. Synopsis and alphabetical list of the described species of the Coleopterous genus *Helota* McL., id. *Polyctesis igorrota*, a new species of Buprestidæ,* K. M. Heller. Contributions to the knowledge of the family Brenthidæ,* Dr. A. Senna. On the Ceylon Cetoniidæ collected by J. Z. Kannegieter,* J. R. H. N. van de Poll and J. Z. Kannegieter. A new species of the Longicorn genus *Neopharsalia* v. d. Poll,* J. Z. Kannegieter. Four new species of Gyrinidæ of the genus *Orectogyrus*,* M. Regimbart.—No. 4, October, 1891. Two new species of the Lucanoid genus *Cyclommatus* Parry, C. Ritsema Cz. A new Oriental species of the Coleopterous genus *Chelonarium*,* id. Further contributions to the knowlege of the *Helota* species of Burma,* id. *Lomotropa vellerialis*, new species of Pyralidæ,* P. C. T. Snellen. Description of nine new Elateridæ from the Leyden Museum,* E. Candeze.

ENTOMOLOGISCHE NACHRICHTEN, xviii, 1, Berlin, January, 1892.—Description of some new varieties of butterflies from Bucovina and the vicinity,* C. von Hormuzaki. On some rare Tracheata from Rheinland, C. Verhoeff. Five new African Mantodea,* Dr. F. Karsch; *Dactylopteryx* n. gen. Some biological fragments, C. Verhoeff.

ZOE, ii, 4, Jan. 12, 1892.—Some biological peculiarities of the Phylloxera and a method of utilizing them for the protection of vineyards, H. H. Behr.

TRANSACTIONS OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA, xiv. Adelaide, July, 1891.—Description of a new species of *Cossus*,* J. G. O. Tepper, 1 pl. Further notes on Australian Coleoptera, with descriptions of new genera and species,*† Rev. T. Blackburn. Descriptions of new Australian Lepidoptera,* E. Meyrick; *Momopola* n. gen.

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* Contains new species other than North American. † Contains new genera.

DIE KAEFER VON MITTELEUROPA.—Die Kaefer der oesterreichisch-ungarischen Monarchie, Deutschlands, der Schweiz, sowie des franzoesischen und italienischen Alpengebietes, Bearbeitet von Ludwig Ganglbauer. Erster Band. Familienreihe Caraboidea. Wien, Carl Gerold's Sohn, 1892, 557 pp., 55 woodcuts.

CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION, Bulletin 33, Entomological Division, Ithaca, N. Y., November, 1891.—Wireworms, J. H. Comstock and M. V. Slingerband; figs.

NOTES UPON THE TRANSFORMATIONS OF SOME AFRICAN LEPIDOPTERA by W. J. Holland (from Psyche, vi, pp. 213–216, pl. 5).

ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE (2), ix, 1891, 4, Paris.—Note on the Pantopod genera *Phoxichilus* Latr. and *Tanistylum* Miers, W. Schimkewitsch.

BIOLOGISCHES CENTRALBLATT (Erlangen), Dec. 31, 1891.—The amitotic nuclear division in Arthropoda, H. E. Ziegler and O. von Rath.—Jan. 15, 1892. Contribution to the anatomy and embryology of the Phalangidæ, V. Faussek.

ZOOLOGISCHER ANZEIGER (Leipzig), Jan. 11, 1892.—On sense organs in the palpi and first pair of legs of Solpugidæ, Dr. P. Bertkau, fig.

COMPTE RENDU. SOCIETE DE BIOLOGIE (Paris), Jan. 9, 1892.—The wandering cricket (*Schistocera peregrina* Oliv.) and its cryptogamic parasite (*Lachnidium acridiorum*), E. A. Giard.

THE ENTOMOLOGIST (London), February, 1892.—The past wet Summer and its probable effect upon the development of Lepidoptera, R. Adkin. Evolution of colors in the *Vanessæ*, W. W. Smith. Evolution of insect colors, F. H. P. Coste. Use of the hairs of *Acronycta alni*, M. Fitz-Gibbon. Notes on British insects, etc.

BOLLETINO DEI MUSEI DI ZOOLOGIA ED ANATOMIA COMPARATA DELLA R. UNIVERSITA DI TORINO, 108, Sept. 20, 1891.—Diagnoses of four new genera of Diptera, Dr. E. Giglio-Tos.

UNTERSUCHUNGEN UEBER GLATTE UND VOLLKOMMEN QUERSTREIFTE MUSKELN DER ARTHROPODEN von Dr. Julius Vosseler, Tubingen, 1891, H. Laupp, pp. xii, 150, 6 plates.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE (London), February, '92. —A new genus and species of Aleurodidæ,* A. C. F. Morgan, 1 pl.; *Aleurodicus* n. g. Description of three new species of the genus *Phanaeus* Macleay,* B. G. Nevinson. Annotated list of British Tachinidæ, R. H. Meade. Stylopized bees, F. V. Theobald. Oviposition of *Adela viridella*, T. A. Chapman. On the rearing of *Pachetra leucophæa* from the egg, W. R. Jeffrey. Notes, etc.

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* Contains new species other than North American.

BULLETIN OF THE MUSEUM OF COMPARATIVE ZOOLOGY AT HARVARD COLLEGE, xxii, 3, Cambridge, January, 1892.—Amitosis in the embryonal envelops of the scorpion, H. P. Johnson, 3 plates.

MISSISSIPPI AGRICULTURAL AND MECHANICAL COLLEGE EXPERIMENT STATION, Bulletin No. 17.—Insects injurious to stored grain, H. E. Weed. December, 1891.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xviii, 4, September–December, 1891.—The species of *Agrilus* of Boreal America, G. H. Horn, M.D., 1 pl. On a collection of Hymenoptera made in Jamaica during April, 1891, W. J. Fox. Notes on North American Tachinidæ *sens. str.* with descriptions of new genera and species, C. H. Tyler Townsend.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

NEUROPTERA.

Ptynx furciger McLachlan, Trans. Ent. Soc. Lond., '91, p. 509. Ariz.

LEPIDOPTERA.

Albuna modesta Kellicott, Can. Ent. xxiv, p. 46. Ohio.

HYMENOPTERA.

Aulax nabali Brodie, Can. Ent. xxiv, p. 13. Ontario.

Cephus occidentalis Riley and Marlatt, Insect Life, iv, p. 177. Cala.

Acoloides emertonii Howard, Insect Life, iv, p. 202.

Bracon furtivus Fyles, Can. Ent. xxiv, p. 35.

Pompilus propinquus Fox, Trans. Am. Ent. Soc. xviii, p. 339; *P. æneopurpureus*, p. 339; *Salius opacifrons*, p. 340; *Agenia compressa*, p. 340; *Planiceps euferalis*, p. 341; *Epeolus rufoclypeus*, p. 344; *Megachile Martindalei*, p. 344; *M. multidens*, p. 345; *M. pedalis*, p. 347; all from Jamaica.

ORTHOPTERA.

Xiphidium Scudderi Blatchley, Can. Ent. xxiv, p. 26. Indiana.

Apithes McNeilli Blatchley, l. c. p. 27. Indiana.

Pezottettix hoosieri Blatchley, l. c. p. 31. Indiana.

DIPTERA.

Berismyia n. gen., Stratiomyidæ, Giglio-Tos, Boll. Mus. Zool. Anat. Comp. Aniv. Torino, vi, 108, p. 2, fig. Type *Beris americana* Bellardi.

Rhopalosyrphus, p. 3, figs.; *Omegasyrphus*, p. 4, figs.; *Megamepoton*, p. 5, figs., n. gen. Syrphidæ, Giglio-Tos, l. c. Types to be hereafter described.

Epacmus concinnus, pellucidus, fumosus Coquillet, Can. Ent. xxiv, p. 9. California.

Tachinidæ: *Siphoplagia* n. gen., Townsend, Trans. Am. Ent. Soc. xviii, p. 349; *S. anomala*, p. 350, N. Mex. *Goniochæta* n. gen., p. 351; *G. plagioides*, p. 352, N. Mex. *Tachina spinosula*, p. 353, Ill. *Pachyophthalmus aurifrons*, p. 354, Ill. *Miltogramma flavicornis*, p. 355, Ill. *M. argentifrons*, p. 357, Ill. *M. cinerascens*, p. 358, Ill. *Masicera nigrita*, p. 358, Ill. *M. sordicolor* p. 359, Ill. *Hypertrophocera* n. gen., p. 360; *H. parvipes*, p. 361, N. Mex. *Aphria ocypterata*, p. 361, S. Dak., Minn.? *Exorista ciliata*, p. 363, Ill. *Laccoprosopa* n. gen., p. 365; *L. sarcophagina*, p. 366, Ill. *Frontina acroglossoides*, p. 367, Ill. *Siphona illinoensis*, p. 368, Ill. *Phasioclista* n. gen., p. 369; *P. metallica*, p. 370, Ill., S. Fla. *Ennyomma* n. gen., p. 371; *E. clistoides*, p. 371, Ill. *Clytia flava*, p. 372, Ill. *Atrophopoda* n. gen., p. 373; *A. singularis*, p. 374, Ill. *Epigrymia* n. gen., p. 375; *E. polita*, p. 376, Va. *Drepanoglossa* n. gen., p. 377; *D. lucens*, p. 378, N. Mex. *Ceratomyiella* n. gen., p. 379; *C. conica*, p. 380, Ill. *Leucostoma atra*, p. 380, Ill. *Vanderwulpia* n. gen., p. 381; *V. atrophopodoides*, p. 381, N. Mex.

COLEOPTERA.

Phanæus Flohri Nevinson, Ent. Mo. Mag. (2), iii,, p. 33. Jalapa, Mex.

Agrilus.—Synoptic table of species and twenty-one new species described, Horn, Trans. Am. Ent. Soc. xviii, 4.

BITTEN BY A TARANTULA.—Bridgeport, July 20th. As Louis Pastine, a fruit dealer of Main Street, was moving a bunch of banannas at his store, Saturday, a huge tarantula jumped out and stung him on the thumb of the left hand. Pastine ran to the office of Dr. C. W. Fitch, who has lived in Central America, and is an expert on the tarantula. Before he reached the doctor's office the thumb had swollen to twice its natural size. Mr. Pastine says that immediately after the sting the most excruciating pains shot through his arm and both sides. In a moment the pains had penetrated even to his liver, which was seriously affected. Dr. Fitch cauterized the wound, and expects that Mr. Pastine will recover. The Doctor says that the tarantula's bite is not very dangerous, except when it is in an excited condition, and that the one which bit Mr. Pastine was in a rather torpid state. During his fifteen years in Central America he was bitten twenty times by them. He knew how to treat the sting, and attended to it immediately, which is essential. "If," said the Doctor, "you can imagine yourself suffering a pain one hundred times as intense as a wasp sting, you can realize what it is to be bitten by a tarantula. To test the ferocity of the spider, I once cut a round hole in the centre of a newspaper and placed the tarantula in the hole. Then I set fire to the paper, and the insect finding itself hemmed in on all sides, threw its tail over, and stinging itself on the back died instantly."

REVIEW.

Die Zweiflugler des Kaiserlichen Museums zu Wien, v. Vorarbeiten zu einer Monographie der Muscaria schizometopa (exclusive Anthomyidæ). Part II. By Prof. Dr. Friedrich Brauer and J. Edlen v. Bergenstamm. Wien, 1891.—I am indebted to the authors for a copy of the above work, which has recently been published. It consists of 140 quarto pages (no plates), and is in continuation of their work begun in Part I, under same title, and published in 1889.* About 100 new genera are erected, and not quite as many new species, these being entirely additional, be it understood, to the new genera and species published in Part I. One can only deplore the lack of order, uniformity and comprehensiveness displayed in the body of the work, which consists entirely of corrections and additions to be interpolated at designated intervals throughout Part I. The genera of other authors have been mercilessly used. Mr. v. d. Wulp's recent genera (published in the Biol. C.-A.) are torn to pieces bodily, and patched up from other quarters. The authors are to be complimented on presenting at the end of their work a systematic list of all the groups, genera and species which they have proposed in Parts I and II. This is put in very comprehensive form, and is followed by a still more convenient index of specific names leading to the genera in which the authors have placed the species, and designating the genera to which the latter were originally referred by their describers. The ruthless deposition of genera, in which the authors indulge, should not be countenanced. *Echinomyia* is decapitated, and *Tachina* installed in its place. *Eutachina* is created to fill the vacancy thus left by *Tachina*. Numerous new genera are erected on trivial or insufficiently designated grounds, at the expense of former well-to-do ones; or genera long ago abandoned are raised from a condition of comparative obscurity, and made to supplant those which have long been in use. Why the generic term *Latreillia* should be preferred to *Belvosia*, when both were described on adjoining pages by the same author in 1830, is beyond explanation, and especially when we consider the time-honored usage of *Belvosia*, and the fact that *Latreillia* was proposed by Roux, in 1827, for a genus of Crustacea. The name *Metopodia* is applied to a new genus; this is apt to become confused with *Metopodus* Am. Serv. (Hem.) or with *Metapodius* Westw. (Hem.) If the genus be a valid one, I would propose the use of the term Neometapodia for it. As nearly as I can form an opinion, without actually cataloging and classifying all the names, the new genera and species proposed (usually insufficiently characterized) are divided geographically as follows: N. Am. gen. 25, spp. 17; So. Am. gen. 18, spp. 18; Extra Am. gen. 59, spp. 61. If the authors would present full descriptions, properly and systematically arranged, of their new genera and species, their work would be much more comprehensive and productive of good. As it is, their labors can scarcely be appreciated by one who has not access to the collections in the Museum in Vienna.—C. H. T. Townsend.

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* For a notice thereof by Dr. Williston, see Ent. News, vol. i, p. 77.—Ed.

A REGULAR MEETING OF THE ENTOMOLOGICAL SECTION OF THE A. N. S. was held at the Hall Jan. 28, 1892. Dr. Horn, Director, presiding. Dr. Horn donated to the cabinet a number of Mexican Coleoptera. Mr. Calvert presented the second installment of European Odonata, numbering 29 specimens. Mr. Nell presented a specimen of Odonata new to the collection. Mr. Martindale called attention to a paper by Dr. W. J. Holland on a peculiar Lycænid chrysalis from Africa, which had a Simian aspect. Dr. Horn mentioned a paper he had recently written, on some variations in the markings of Coleoptera, and spoke of some interesting points brought out. Dr. Skinner exhibited a pair of *Parnassius smintheus* showing interesting variation from the normal. Mr. Martindale spoke of a method of preparing naphthalin cones by heating the head of a pin and thrusting it into the fused balls to be obtained at the druggists'; they are clean, leave no débris, and cost about five cents per hundred. Mr. Calvert stated that the dragonfly presented by Mr. Nell was *Gomphus dilitatus*, and was caught in the streets of the city in May, 1891; it is a Southern species, and he had never heard of its being found before in this locality.

OBITUARY.

HENRY WALTER BATES, F.L.S., F.Z.S., etc., died in London, February 17th. In this death England loses one of her ablest entomologists. Beginning in 1848 his entomological contributions have been continued, with interruption only during his long sojourn on the Amazons, until very recently. His studies were limited to the Lepidoptera-Rhopalocera, and to three large and difficult families of Coleoptera: Carabidæ, Scarabæidæ and Cerambycidæ, in all of which he had accumulated much material, especially rich in Amazon species. His industry and ability are well shown in the volumes with their supplements in the "Biologia Centrali-Americana" on his favorite families. His narrative of his sojourn on the Amazons is filled with notes showing his acuteness of observation in the field. For many years he has filled the position of Assistant Secretary of the Royal Geographical Society. Those who knew him personally will mourn the loss of a cultured man, a kind friend, and a genial companion.

ERRATA.

On page 5, line 9, for 35 mm. *read* .35 mm.
" 5, line 18, for 6.5 mm. *read* .65 mm.
" 5, line 24, insert a comma (,) after joints 5 and 12.
" 5, line 24, for trifle, *read* triple.

ENTOMOLOGICAL NEWS for February, was mailed January 29, 1892.

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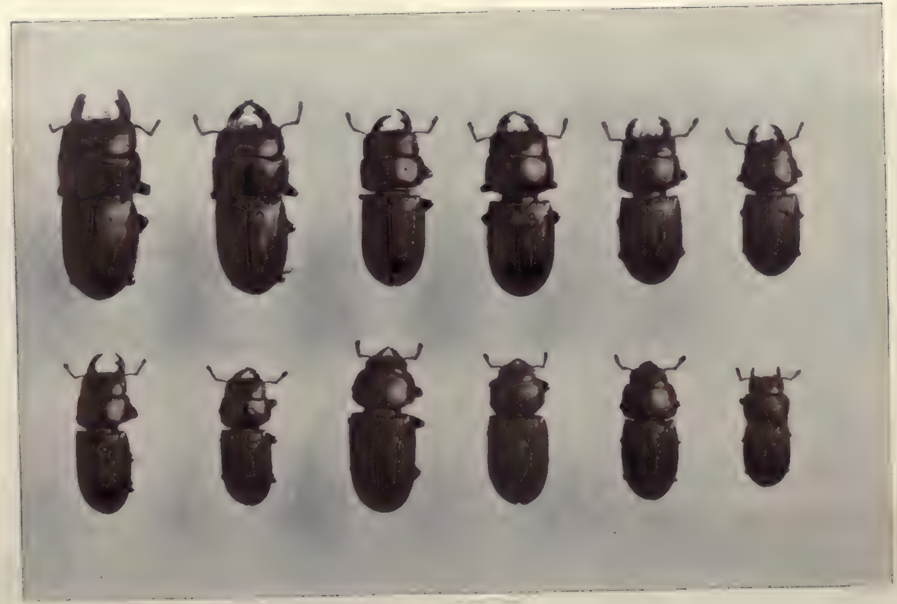

Dorcus parallelus.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. APRIL, 1892. No. 4.

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Dorcus parallelus Say.

By GEO. H. HORN, M. D.

The plate forming the frontispiece of this number has been prepared from material which, for the most part, belongs to the American Entomological Society. The reasons for presenting it are : to settle finally the relationship existing between the names *parallelus*, *costatus* and *brevis*, now in our lists—to illustrate the possibilities of variation in form and sculpture, and, finally, to ascertain by experiment the adaptability of the various photo-plate processes for illustrations taken from the objects themselves. Periodically the question is discussed, what is *Dorcus brevis*, and is it distinct from *parallelus?* It need hardly be said that this question arises principally among those young in experience and with small series, although species are frequently described as new with far less claim to distinctness than the extreme specimens on the upper row. *D. brevis* is founded on males of full development, broad thorax and smooth surface. The first two figures accurately represent Say's idea. As a rule the males have quite a smooth thorax, while the females are rather closely punctate. In the *brevis* form the elytra are also quite smooth, but the transition from this to the striate sculpture is gradual, and can readily be traced even in the plate. *D. costatus*, although merely a catalogue name, is based on those females in which three of the intervals on each elytron are a little wider and more prominent, as faintly shown on the fifth figure in the second row. The terminal figure is an exceptionally small female collected by Mr. Henry Wenzel. The six specimens on the upper row and two on the lower are males, as will be known by the more prominent mandibles with a tooth on the upper side. Regarding the possibilities of variation, the plate shows for itself, although far less than the specimens themselves, and *Dorcus parallelus* is by no means a good species for the illustration of varietal possibilities. The use of any photographic method usually causes a loss of some detail, but when form alone is to be illustrated more accurate results for comparison can be obtained.

IN ALASKA.

By W. G. Wright, San Bernardino, Cal.

One might suppose that a trip to Alaska would afford an entomologist abundant material for collecting, and that he might write a book about what he saw through his entomological glasses, and experienced in pursuit of his pet hobby. But having made the trip, I am obliged to say that the results, both actual and theoretical, were very meagre.

To begin with, the country from the Strait of San Juan de Fuca to Yakatat Bay is all of a piece. The ground is all solid rock, if I may so speak, islands and mainland alike, and the channels through which the steamer sails most of the way are mere cracks in the hard, black rock, some of them so deep that it is impracticable to anchor in them. How a tree can manage to find root-hold upon such solid rock is a continual mystery, but they do, and the whole country, whether level or side-hill (and most of it is tilted up an angle frequently acute), is covered with the same endless ranks of sombre fir trees, the very sight of which at length becomes a weariness; and the trees, with horizontal limbs down to the ground, come clear down to the water's edge, so that a landing becomes a difficulty. The Japan current, or some other cause, gives to Sitka about the same temperature as at Victoria. To that current the whole coast from Yakatat Bay to the Columbia River owes a liberal allowance of fog and misty rain, more at the North and less at the South, but otherwise the thousand miles of northing from Puget Sound gives no notable climatic difference. Therefore, it is easy to see that, with the same geological formation, the same flora, and the same climate, the same fauna must prevail; and so I have found it. So far as my insect captures are determined I did not get a specimen in Alaska but what is found about Puget Sound in greater abundance than in Alaska. One *Pieris*, from Sitka, bears another name from those of Puget Sound, but I regard it as the same species; I will "lump" that much. The country inland is well-nigh impenetrable, being, as I have said, mostly up edgewise, and sometimes almost to the perpendicular, and densely wooded; and underneath, a network of fallen trees thickly covered with sphagnum or moss, which apparently never gets dried out, because of the rain and the dense shade. Five miles a day is good traveling through these thickets. There are no clearings or ranches, or farms; no room for a butterfly to stretch its wings. In Coleoptera it is as bad. I got one *Cychrus marginatus* at Metlakahtla, and one at Loring, and a pair of *C. angusticollis* at Junean, but nothing of interest anywhere.

Wrangel is a green spot in my memory, because there I got my first Alaskan butterflies. To be sure they were only a common *Pieris*, but it is noteworthy to get any butterflies in such a rainy country. These poor Pierids were nearly starved by the long season of rain, and were crawling about upon an umbel of *daucus* trying to feed; they could not fly, because of the rain, so I picked them off the flowers with my fingers, and took them in out of the wet. Numbers of little geometrid moths were flying about, but I had no net out in the rain, so I did not get them. I met here, by chance the usual way, an eastern naturalist who was skinning birds. He told me that he had seen in the vicinity one specimen of *Limenitis Lorquini*. From that item we may set down Fort Wrangel as the northern limit of that species.

About the town of Junean I caught a lot of Pierids, of the same old species, but no other butterfly was seen. Then I followed a mining road out into the country as far as time would permit, but found nothing else. By the roadside lay some pine blocks left by the axe-men. Under one of these I found the fine pair of *C. angusticollis* before spoken of, but no other beetles worth naming.

Chillkat is the most northern of all the stopping places on this Alaskan route; it is close to the 60th degree of North latitude. Here is a narrow grassy border along a moraine, and at the shore line, and I forthwith went ashore with my net. A half dozen Pierids were taken and then came a lull. Presently I began to sweep the grass for beetles, and lo ! some Pterophoridæ. So I spent most of the time in getting that little thing, of which there seemed to be several species. This was the most unexpected find of the whole trip.

At Sitka I remained sixteen days, seven of which were mostly sunny, a remarkable thing, as the people told me, as sunny days are exceptional there. One species of *Pieris* was common about the streets, *P. Bryonæ.* One gentleman excited my curiosity by saying that the real Japan silk-worm moth was found there, and so one day he showed me the "moth" flying about his cabbage plants; it was this *Pieris.* I was also informed that this same butterfly was found all along the vast chain of Aleutian Islands, nearly to Siberia, in great numbers; that it feeds on honey-dew, which is found on the leaves and twigs of Alder bushes, and that he had seen the bushes white from the abundance of the butterfly; all of which is credible. But about Sitka I found butterflies very scarce. Beside this *Pieris*, I got only one other species, *Chryso. helloides*, small in size, and almost black. The female, especially, was so dark I could hardly believe it was that species, but the male was rather more like the Southern form, and showed the violet gloss faintly [*Chrys. florus ?*—Ed.]

Near Sitka, a few miles back, is a mountain, Mt. Verstovia, 3600 feet high. One fine day I climbed this mountain to above timber line; here, at 3500 feet altitude, to see if a *Parnassius* or a *Chionobas* could not be found. Upon the alpine slopes above timber line was a most lovely butterfly place. Some old snow-banks yet remained here and there, but on many of the drier slopes grass and flowers grew luxuriantly, and the air was so mild, and the sun shone so delightfully, that it seemed as if there must be a dozen *Parnassius*' in sight at any moment, but not one did I see; not a butterfly of any color. I never felt so disgusted and discouraged in my life before. I just gave a big growl of displeasure, and threw down my net and other butterfly traps in anger, and went off to a snow-bank and ate snow, and tried to eat the waxen white blossoms of a heather which grew all about; but it all didn't pay, so I came back to where the guide was lolling on a dry bank by a spring, and ate lunch with him instead. After that I felt better, but not to this day have I regained my serenity of mind as to the outcome of that day's work. Every thing was so favorable, so promising, and the possibilities so great, and not even one poor little butterfly to bless myself with; it was too bad.

North of the great chain of Aleutian Islands, about Norton Sound, and even north of Bering Strait, and under the icy zone of the Arctic Circle, at Kotzebue Sound, it appears that more butterflies are found than at Sitka, because the islands deflect the Japan current to the east and south, so that the more northern regions mentioned are more free from the fog and rain than Sitka is. But even Kotzebue Sound is not a good field for the entomologist, and if any enthusiast should desire to go there, my advice would be, "don't."

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Preparatory Stages of Pamphila manataaqua.

By Philip Laurent, Phila,, Pa.

On June 24, 1891, I secured two female *Pamphila manataaqua*, which I placed in a small cage containing a piece of grass sod; during the night nine eggs were laid. The eggs are hemispherical in shape, excepting that the apex is somewhat flattened. In color the eggs are of an opaque-white with a greenish tinge. When observed with the naked eye the egg appears to be smooth, but observed through a glass of ordinary power it will be seen that the egg is covered with minute depressions. On July 8th the young larvæ emerged from the egg. The larvæ are slender and more cylindrical than those of most *Pamphila*. In color they are the same as the egg, excepting the head, which is of a dark brown color. The head, when observed through a strong glass, is found to have a corrugated appearance. On the upper part of first segment immediately back of the head, a narrow band of dark brown is observed. July 25th: Larvæ are now about a half inch in length; the body is of a dark or oil-green color, while the head still remains brown, but of a lighter shade than when first observed.

August 2d: Larvæ are now about three-quarters of an inch in length. On examining the larvæ with a strong glass, it will be seen that the larvæ are covered with numerous irregular spots of a dark lavender color; the body is also seen to be thinly covered with hair, that on the sides of larvæ being somewhat longer than that on the top.

August 13th: Larvæ are now full grown, and are about one inch in length. In appearance there has been but little change since August 2d, excepting in the fore feet, which are now dark brown instead of light brown.

August 14th: The first larva changed to chrysalis to-day. The chrysalis is of a greenish white color, the space occupied by head and thorax, and wing-cases being somewhat darker than the abdomen. The eye space is very prominent; the tongue case is of a light brown color and extends almost to the tip of abdomen. The chrysalis is fastened among the grass stalks, and is dusted over with a white silky powder.

Aug. 20th: The last of the larvæ changed to a chrysalis to-day.

August 29th: The first imago emerged to-day a male.

August 30th: Another male appeared.

September 1st, two males; September 2d, one female; September 3d, one male. The others are probably dead.

At no time was I able to discover the exact time of moulting, or could I ever find any of the remains of cast-off larva skins: it may be that the larvæ devour the cast-off skins, but of this I am not certain, so much of their life is spent in the little grass houses that they construct for themselves, that it is hard to keep an eye on them at all times. I thought perhaps the moulting took place within these houses, but was never able to find any cast-off skins within them.

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Notes on the Life-history of Calpodes ethlius.

By T. D. A. Cockerell, Kingston, Jamaica.

Mr. Scudder, in his "Butterflies of New England," p. 1750, gives an interesting account of this species; a description of the mature larva and pupa has also been published by the present writer in the "Journal of the Institute of Jamaica," No. 1, p. 29. Mr. I. I. Bowrey has kindly supplied me with eggs found on *Canna* in his garden in Kingston, from which I have obtained the young larvæ. Very many of the eggs never produce larvæ, but fall victims to a small hymenopterous parasite. This was first observed by Mr. Bowrey, and is specially interesting, because hitherto no parasite of *C. ethlius* seems to have been recorded. I have not very carefully examined these egg parasites, but they are evidently of the genus *Trichogramma*, or closely allied thereto. A specimen, compared with Riley's figure of *T. pretiosa*, has a broader head, and the thorax is larger in proportion to the abdomen (my specimen is probably a male); the upper wings are apparently more truncate, and the lower seem more slender. With the *Trichogramma* I found a broken specimen of a different Chalcid, with a broad abdomen about a third longer than wide, a thorax much the same size and shape, wings stretching considerably beyond the tip of the abdomen, submarginal vein rather stout, marginal curved away from the costa, stigmal long, with a distinct, though small knob, last pair of legs very long, stretching beyond the tips of closed wings. These notes, although so fragmentary, may serve for comparison with parasites of *C. ethlius* that may be found elsewhere. Certainly, these egg parasites do much towards keeping down the *Canna* butterfly in Jamaica. The *Trichogramma* is the important one; whether the other species is common remains to be seen. Eggs of *C. ethlius* brought to me by Mr. Bowrey on Oct. 24, 1891, were laid singly on a leaf of *Canna.** They are, as stated by Dr. Wittfield, plainly visible. The egg is rounded, in section forming rather more than half a circle, smooth, shiny, opaque, with fine impressed microscopic punctures or lines, but no ribs. Diameter 1¼ mm., color white, with a purple-gray tinge, especially above. The egg-shell is white after the exclusion of the larva. The lately-hatched larva is 4 mm. long, and rests on the underside of the leaf, near the edge, which it bends by spinning a transverse thread 4 mm. long. It is pale green (Scudder says pale yellowish brown) with a black shiny head, which has a deep longitudinal sulcus on the crown. Thoracic shield black; body with only a few very short and inconspicuous hairs. The shape is cylindrical, with a large head; different from *P. zabulon* as figured by French. On November 3d the larva was 13 mm. long, cylindrical, looking

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* On the same leaf I found the eggs of an unknown moth; these are smaller, and laid in a group of eighty or more, very regularly in rows, equidistant, no two eggs touching, They have about twenty-four well-marked ribs. The larvæ proved to be looping Noctuids, but the imago was not reared.

quite like a Pyralid. Head now brown instead of black, but the narrow thoracic shield black; body pale glaucous-green; dorsal vessel showing as a darkish line. Each segment has several transverse grooved striæ or wrinkles dorsally. There is very little variation in the imago so far as Jamaican examples are concerned. In a series obtained by Mr. Bowrey I find the expanse varying from 53 to 61 mm. The largest vitreous spot on the fore-wing is often subquadrate, as described by Scudder, but often elongate, considerably longer than broad. Mr. Scudder calls this "The Brazilian Skipper," but the *Canna* butterfly, or *Canna* Skipper, would be a more appropriate name.

NEW NORTH AMERICAN TACHINIDÆ.

By C. H. Tyler Townsend, Las Cruces, N. Mex.

The following are descriptions of South Florida and Jamaica forms, collected respectively by Mr. Charles Robertson, of Carlinville, Ill., and Mr. Charles W. Johnson, of the Wagner Institute, Philadelphia.

Blepharipeza nigrisquamis n. sp. ♂.—Eyes brown; frontal vitta blackish brown; face, cheeks, and sides of front silvery white pollinose, darker in some lights; facial ridges bristly half way up, sides of face bare, except for descending frontal bristles; antennæ and arista black, third antennal joint about three times as long as the somewhat elongate second; proboscis black, labella large, brown; palpi rather stout, bristly, rufous, blackish at base; occiput silvery, gray-hairy. Thorax purplish black, faintly silvery pollinose, with four narrow black vittæ interrupted at suture, the outer pair more so than the inner pair; scutellum black, very bristly. Abdomen wholly dense black, with a bluish or purplish reflection, thickly set with macrochætæ. Legs black, claws and pulvilli a little elongate, pulvilli tawny. Wings grayish hyaline, broadly and abruptly black at base; tegulæ and alulæ black, halteres brownish. Length of body, 9 mm.; of wing, nearly 9 mm.

Described from one specimen; Portland, Jamaica, April (C. W. Johnson). This species differs from *B. leucophrys* in its smaller size, blacker bases of wings, and somewhat stouter palpi.

Pachyophthalmus floridensis n. sp. ♂.—Eyes brown; frontal vitta nearly black, velvety, narrow, about one-third width of front, front about one-fifth width of head; frontal bristles in double row; sides of front, face, and cheeks silvery whitish, with slight brassy tinge on front; vibrissæ distinct, decussate; antennæ black, third joint hardly one and a half times as long as second, arista black; proboscis brownish, palpi blackish; occiput cinereous. Thorax and scutellum silvery cinereous, with three broad black vittæ, which are continued over scutellum. Abdomen shining black, anal segment rufous, whole abdomen clouded with silvery cinereous, giving the appearance of three broad, irregular, blackish vittæ, interrupted at the sutures; first two segments with a lateral pair and a median marginal pair of macrochætæ, third and anal with a marginal row. Legs black, femora silvery cinereous, claws and pulvilli short. Wings slightly grayish, nearly hyaline; tegulæ whitish, halteres light brownish. Length of body, 5 mm.; of wing, 4 mm.

Described from one specimen; So. Florida (Robertson).

Miltogramma decisa n. sp. ♀.—Eyes reddish brown; front brassy golden; less than one-third width of head, the frontal vitta nearly obsolete in front; two orbital bristles; face and cheeks pure silvery white; antennæ pale rufous, third joint one and a half times as long as second, arista blackish; vibrissæ distinct, decussate; proboscis black, palpi rufous (so far as can be seen); occiput cinereous, short and sparsely bristly. Thorax cinereous, silvery pollinose, with three narrow median vittæ and a heavier outside one; scutellum more or less cinereous. Abdomen shining black, first segment on sides and second segment entirely, except triangle in middle, rufous; bases of segments two to four silvery white pollinose; first segment without macrochætæ, second with a median marginal pair, third with a lateral pair and a median marginal pair, and with a marginal row. Legs black, front femora silvery on outside, claws and pulvilli very short. Wings grayish hyaline, tegulæ white, halteres brownish. Length of body, 4⅓ mm.; of wing, 3½ mm.

Described from one specimen; So. Florida (Robertson).

Anisia vanderwulpi n. sp. ♂ (?).—Eyes cinnamon brown; frontal vitta velvet blackish brown; sides of front and orbital margins of occiput brassy golden; two orbital bristles; face and cheeks silvery white; antennæ rufous, the third joint brownish distally and on front edge, arista brownish; proboscis brownish, short, fleshy, labella large, pale tawny, palpi pale tawny; occiput silvery, gray-hairy below. Thorax silvery white pollinose, with four blackish vittæ, the outer ones heavier and interrupted at suture, humeri and pleuræ silvery white; scutellum silvery white pollinose. Abdomen black, more or less silvery white pollinose, but particularly so at bases of segments and more broadly on vertex, terminal portion of anal segment pale rufous; first two segments with a lateral macrochætæ and a median marginal pair, the second segment with a median discal pair also; third with a median discal pair, and a marginal row of about ten; anal segment with a marginal and discal row of about eight, those in discal row strongest. Legs black, coxæ and distal inferior half of femora light rufous, femora more or less silvery; claws and pulvilli short, pulvilli whitish. Wings grayish hyaline, tegulæ transparent like isinglass, halteres yellow. Length of body, 6 mm.; of wing, 5½ mm.

Described from one specimen; Portland, Jamaica (C. W. Johnson).

(To be continued.)

ELEMENTARY ENTOMOLOGY.

LEPIDOPTERA–HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

The first of the Heterocerous families is the Sphingidæ. This family comprises moths of rather large size, the thorax robust, the abdomen elongate and tapering in most cases, and usually considerably exceeding the anal angle of the secondaries. The head is well developed as a rule, and the antennæ are usually fusiform and more or less prismatic; that is to say, they are rather thicker in the middle and taper both to base and tip, more so toward the tip, which is generally furnished with a little recurved hook. The prismatic shape is usually quite marked in the species, and is a peculiarity of the family. The primaries, or fore-wings, are rather long and narrow in most cases, often more or less evidently lanceolate, the secondaries or hind wings proportionately quite small and narrow. As a whole, the wings are small, compared with the bulk of the insect. The venation throughout the family is quite constant. The primaries may have eleven or twelve veins, according as 9 is, or is not branched near its tip. The entire subcostal series is crowded closely to the costa, so that it is difficult to follow the course of all after vein 7. Vein 5 is nearly midway between 4 and 6, and the cell is closed in those species known to me. Vein 1, the submedian or internal vein, is furcate at base.

On the secondaries the costal and subcostal arise independently from the base and run separately to their termination, joined, however, near the base by an oblique cross-vein, which is characteristic of the family. Here also vein 5 is from near the middle of the cross-vein, and there are two internal veins.

The larvæ of the Sphingidæ are as easily recognizable as the imagos by the curved spine or horn on the top of the terminal segment. In the species in which this horn is wanting there is a shiny tubercle or knob, occupying the position of the more usual process. The pupation is subterranean in most cases.

Compact as is the family in general appearance and main structural features, it divides readily into a number of well marked subfamilies.

The Macroglossinæ are easily distinguished by the rather obviously clubbed tip of the antenna. They retain their prismatic form and the little recurved hook, but are not fusiform. This subfamily contains the clear-winged forms, *Hemaris*, and a small series of opaque-winged species which have short, broad fore-tibiæ, armed at tip with long stout claws, *Lepisesia*. The species are largely diurnal in habit, flying swiftly in the bright sunshine and hovering over the flowers, on the nectar of which they feed. The tongue is well developed, and often nearly as long as the insect itself.

The Chœrocampinæ have the antennæ more or less distinctly fusiform, and the tongue well developed, often longer than the body. There is a tendency to a bright, banded maculation, the abdomen is often tufted, and the fore-wings have the outer margin sinuate or angulate. In *Enyo* the thorax also is crested. It is in this family that the larvæ often have a knob or tubercle instead of the usual horn. Many of the species are diurnal, as in the preceding subfamily, and they are often as swift of flight.

The Sphinginæ all have fusiform antennæ, and usually a long tongue. In some of our species this organ is from six to eight inches in length, and from that it dwindles until it becomes obsolete in *Ellema*. The fore-wings are narrow and lanceolate, and the markings are longitudinally strigose, not banded. They are usually crepuscular, flying at twilight, and from their darting motions and their habit of hovering over the food-plant, the term "Hawk Moths" has been derived.

The Smerinthinæ are quite different in many respects. The tongue is obsolete, unless for feeding in all forms, the antennæ are often serrated, and sometimes pectinated, and the primaries are often quite broad and usually angulated or dentate. In *Cressonia* the male antennæ have two branches to each joint, as in the Saturniidæ.

A brief statement of subfamily differences is as follows .

Antennæ distinctly clubbed at tip	**Macroglossinæ.**
Antennæ not distinctly clubbed, usually fusiform.	
Tongue long and strong.	
Primaries with outer margin sinuate or angulate .	**Chœrocampinæ.**
Primaries with outer margin even	§ **Sphinginæ.**
Tongue weak and short.	
Primaries with outer margin even	§ **Sphinginæ.**
Primaries angulated or dentate	**Smerinthinæ.**

TWO NEW SPECIES OF COLEOPTERA.

By G. W. J. ANGELL.

Corymbites Weidtii sp. nov.—Elongate oval, dark metallic bronze, with greenish or crimson lustre; third joint of antennæ shorter and narrower than fourth. Head strongly and densely punctate, with an occipital fovea. Thorax very convex and distinctly, but not closely punctured; anterior angles broadly rounded, sides sinuate, posterior angles strongly produced and divergent. Elytra at base slightly narrower than thorax; one-half longer than wide, greatest width anterior to apical third; sides regularly curved to apex, margin distinct and rather strongly reflexed posteriorly; striæ regular and distinct, more deeply impressed at base; intervals irregularly, rather densely punctured, punctures confluent or linear, giving a strigate appearance in some lights. Abdominal segments shining golden green, punctate; punctures rather dense at sides, sparse at middle.

♂.—Ventral segments more coarsely punctured; third and fourth segments with large, but rather shallow foveæ near elytral margin.

♀.—Ventral segments more finely punctured; a small but deep fovea on either side of third ventral near posterior angles of segment. Length 11 mm.

Cascade Range, British Columbia; altitude 7000 feet. This species, by the structure of the antennæ, naturally falls into Group III of Dr. Horn (Trans. Am. Ent. Soc. vol. iii, p. 319). It is one of the many interesting captures of Mr. J. C. Weidt.

Elmis columbiensis sp. nov.—Elongate oval, shining black, sparsely pubescent. Thorax subquadrate, slightly wider than long, narrowed at front; arcuate and divergent to middle, then subparallel to base, which is strongly sinuate and slightly emarginate at middle; disc sparsely, but distinctly punctured, more densely toward margin; basal lines attaining the middle and limited by two densely punctured foveæ on either side of impressed median channel. Elytra at base slightly wider than thorax, humeri rounded, sides subparallel to apical third, then slightly sinuate and convergent to apex, which is broadly rounded and subtruncate. Elytral striæ deeply impressed, punctures large and rather distinct, intervals very feebly and finely punctate; fifth, sixth and seventh intervals costate. Elytral margin slightly testaceous; ventral segments feebly, but densely punctate, rather densely pubescent at sides. Legs dark testaceous, finely and lightly punctured. Length 2.6 mm.

Fraser River Valley, British Columbia; Mr. C. J. Weidt.

A truly dainty sportsman he,
The fields he never tries;
He takes scent bottles 'neath a tree
And squirts at butterflies.—*New York Herald.*

NOTE ON THE HABITS OF AMMOPHILA.

By S. W. Williston, Lawrence, Kans.

Even the casual observer, to whom all insects are bugs, cannot help but be struck by the great diversity and number of the fossorial Hymenoptera of the plains. Water is often inaccessible, trees there are few or none, and only in places is the vegetation at all abundant. A much larger proportion of insects, hence, find it necessary to live or breed in holes in the ground, than is the case in more favored localities. Especially is this the case with the Hymenoptera, great numbers and many species of which thus breed in excavations made by themselves.

While packing specimens on an open space, uncovered by buffalo grass, in the extreme western part of Kansas, the early part of last July, the attention of a friend and myself was attracted by the numerous wasps that were constantly alighting upon the ground. The hard, smooth, baked surface showed no indications of disturbance, and it was not till we had attentively watched the insects did we learn what they were doing. The wasp is a very slender one, more than an inch in length, with a slender, pedicellate abdomen; it is known to entomologists as *Ammophila Yarrowi* Cres. They were so numerous that one was distracted by their very multiplicity, but, by singling out different individuals, we were enabled to verify each detail of their operations. An insect, alighting, ran about on the smooth, hard surface till it had found a suitable spot to begin its excavation, which was made about a quarter of an inch in diameter, nearly vertical, and carried to a depth of about four inches, as was shown by opening a number of them. The earth, as removed, was formed into a rounded pellet and carefully carried to the neighboring grass and dropped. For the first half of an inch or so the hole was made of a slightly greater diameter. When the excavation had been carried to the required depth, the wasp, after a survey of the premises, flying away, soon returned with a large pebble in its mandibles, which it carefully deposited within the opening; then, standing over the entrance upon her four posterior feet, she (I say she, for it was evident that they were all females) rapidly and most amusingly scraped the dust with her two front feet, "hand over hand," back beneath her, till she had filled the hole above the stone to the top. The operation so far was remarkable enough, but the next procedure was more so. When she had heaped up the dirt to her satisfaction, she again flew away and immediately returned with a smaller pebble, perhaps an eighth of an inch in diameter, and then standing more nearly erect, with the front feet folded beneath her, she pressed down the dust all over and about the opening, smoothing off the surface, and accompanying the action with a peculiar rasping sound. After all this was done, and she spent several minutes each time in thus stamping the earth so that only a keen eye could detect any abrasion of the surface, she laid aside the little pebble and flew away to be gone some minutes. Soon, however, she comes back with a heavy flight, scarcely able to sustain the soft green larva, as long as herself, that she brings. The larva is laid upon the ground, a little to one side, when, going to the spot where she had industriously labored, by a few rapid strokes she throws out the dust and withdraws the stone cover, laying it aside. Next, the larva is dragged down the hole, where the wasp remains for a few minutes, afterwards returning and closing up the entrance precisely as before. This, we thought, was the end, and supposed that the wasp would now be off about her other affairs, but not so; soon she returns with another larva, precisely like the first, and the whole operation is again repeated. And not only the second time, but again and again, till four or five of the larvæ have been stored up for the sustainment of her future offspring. Once, while a wasp had gone down the hole with a larva, my friend quietly removed the door stone that she had placed by the entrance. Returning, she looked about for her door, but not finding it, apparently mistrusted the honesty of a neighbor, which had just descended, leaving her own door temptingly near. She purloined this pebble, and was making off with it, when the rightful owner appeared and gave chase, compelling her to relinquish it.

The things that struck us as most remarkable was the unerring judgment in the selection of a pebble of precisely the right size to fit the entrance, and the use of the small pebble in smoothing down and packing the soil over the opening, together with the instinct that taught them to remove every evidence that the earth had been disturbed.

Lepidoptera of the Adirondack Region of the State of New York.

By Chas. S. McKnight, Saratoga Springs, N. Y.

The late W. W. Hill, of Albany, N. Y., made extensive collections of Lepidoptera in Lewis County in this State, and lists of his captures are to be found in several publications.*

In addition to those therein enumerated I would add the following species taken by myself at Saranac Lake, Franklin Co., N. Y.; elevation, 1500–1600 feet. Light and sugar were both employed. In the early Spring, while the ground was still covered with snow, many of the hibernating forms were taken in sugar camps at rest on the trees or from the sap pails.

Thyreus Abbotii *Swains.*, light, July. Sphinx kalmiæ *S. & A.*, light, July. S. drupiferarum *S. & A.*, light, June. S. gordius *Cram.*, light, July. S. luscitiosa *Cram.*, rare, July. Ellema coniferarum *S. & A.*, larvæ, September. Alypia octomaculata *Hbn.*, bred, June. A. Langtonii *Coup.*, rare, June. Eudryas grata *Fab.*, light, July. Clemensia albata *Pack.*, light, June. Lithosia candida *Hy. Edw.*, light, July. Crocata brevicornis *Walk.*, light, July. C. rubicundaria *Hbn.*, light, July. Arctia virguncula *Kby.*, light, July. Adoneta spinuloides *H. S.*, light, June. Ichthyura inclusa *Hbn.*, light, June. Gluphisia trilineata *Pack.*, rare, light, July. Notodonta stragula *Grt.*, light, June. Phœsia rimosa *Pack.*, rare, light, July. Cœlodarys biguttata *Pack.*, light, July. Lophopteryx elegans *Strk.*,† ♂, light, June. Heterocampa manteo *Doub.*, rare, light, June. H. biundata *Walk.*, light, June. H. cinerea *Pack.*, light, June. Samia cecropia *Linn.*, bred, June. Telea polyphemus *Cram.*, bred, June.

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* Thirteenth Annual Report of the N. Y. State Museum of Natural History, 1879.
Seventh Annual Report on the Topographical Survey of the Adirondack Region of the State of New York, Colvin—Albany, 1880.
"Papilio," iii, p. 27.

† Determined by H. Strecker. In Prof. J. B. Smith's "Check List," 1891, *Notodonta notaria* Hy. Edw. (described in "Entomologica Americana," i, p. 17) taken in Colorado by David Bruce, is given as a synonym of the above. In the Colorado specimens the primaries are described as being of an "even mouse color." In the Adirondack example they are suffused from base to subterminal space and below apex, with brownish fawn, darkest along the costa and gradually fading toward the outer margin into the color of the western form. I am unaware of any previous report of the capture of this species in the east.

NOCTUIDÆ.

Leptina Doubledayi *Gm.*, light, June. L. ophthalmica *Gm.*, light, June. Demas flavicornis *Smith*, light, June. Momophana Comstockii *Grt.*, light, May 19. Agrotis attenta *Grt.*, light, July. A. ochrogaster *Gn.*, sugar, July and August. A. cinereomaculata *Morr.*, sugar, July and August. A. lubricans *Gn.*, sugar, August. A. velleripennis *Grt.*, sugar, August. A. alternata *Grt.*, sugar, August. A. badinodis *Grt.*, sugar, July and August. A. catharina *Grt.*, sugar, August. A. salicarum *Walk.*, at sap, April. Barathra curialis *Smith*, light, June. Hadena ducta *Grt.*, sugar, July. H. fimbrina *Gn.*, sugar, August. H. fractilinea *Grt.*, sugar, August. H. impulsa *Gn.*, sugar, August. Oligia arna *Gn.*, sugar, August. Dipterygia scabriuscula *Linn.*, sugar, August. Tricholita semiaperta *Morr.*, sugar, August. Helotropha reniformis *var.* atra *Grt.*, sugar, June. Arzama diffusa *Grt.*, sugar, June. Platysenta atriciliata *Grt.*, sugar, July. Tæniocampa alia, sap pails and sugar, April and September. T. subterminata, sap pails and sugar, April and September. T. peredia, sugar, September. Homoglæa hircina *Morr.*, sugar, April. Himella thecata *Morr.*, sugar, September. Scopelosoma Pettiti *Grt.*, sap pails and sugar, April and September. S. Morrisoni *Grt.*, sap pails and sugar, April and September. S. devia *Grt.*, sap pails and sugar, April and September. S. Walkerii *Grt.*, sap pails and sugar, April and September. S. lidus *Gn.*, April and September. Scoliopteryx libatrix *Linn.*, sugar, June. Xylina Bethunei *G. & R.*, sap pails, April. X. laticineria *Grt.*, sap pails, April. X. fagina *Morr.*, sap pails, April. X. Thaxteri *Grt.*, sap pails, April. Morrisonia vomerina *Grt.*, sugar, June. Calocampa curvimacula *Morr.*, sap pails, April. C. cineritia *Morr.*, sap pails, April. C. cineritia *var.* thoracica *Put.-Cram.*, April. Crambodes talidiformis *Gn.*, sugar, July. Aletia argillacea *Hbn.*, sugar, July. Abrostola urentis *Gn.*, sugar, August. Plusia striatella *Grt.*, light, July. Alaria florida *Gn.*, light, July. Erastria apicosa *Harv.*, sugar, July. Euclidia cuspidia *Hbn.*, sugar, June. Syneda graphica *Hbn.*, light, July. S. adumbrata *Behr.*, light, July. Homoptera *var.* lunata *Dru.*, sugar, August. H. unilineata *Grt.*, sugar, August. H. Woodii *Grt.*, sugar, September. Catocala gracilis *Edw.*, sugar, August. C. retecta *Grt.*, sugar, August. C. antinympha

Hbn., sugar, August. C. piatrix *Grt.*, sugar, August. Parthenos nubilis *Hbn.*, sugar, August. Pseudanthrœcia coracias *Gn.*, sugar, September. Argillophora furcilla *Grt.*, sugar, September. Homopyralis discalis *Grt.*, sugar, August. Pangrapta decoralis *Hbn.*, sugar, June. Pityolita pedipalalis *Gn.*, light, July. Philometra longilabris *Grt.*, light, July. Megachyta lituralis *Hbn.*, light, July. Spargaloma sexpunctata *Grt.*, light, July. Capis curvata *Grt.*, light, July. Herminia morbidalis *Gn.*, light, August. H. petrealis *Grt.*, light, August. Renia restrictalis *Grt.*, light, June. Heterogramma rurigena *Grt.*, light, June. Bomolocha baltimoralis *Gn.*, light, June. B. bigugalis *Walk.*, light, June. B. albalinealis *Walk.*, light, July. Tortricodes bifidalis *Grt.*, light, June.

GEOMETRIDÆ.

Eudropia effectaria *Walk.*, June. Boarmia crepuscularia *Tr.*, June. Therina eudropiaria *G. & R.*, May. T. semimendaria *Walk.*, May. Lobophora vernata *Pack.*, May. L. anguilineata *Grt.*, May. Chœrodes climataria *S. & A.*, June. Aplodes latiaria *Pack.*, June. Orthofidonia exornata *Walk.*, June. Metanema carnaria *Pack.*, June. M. inatomaria *Gn.*, June. Caberodes confusaria *Hbn.*, June. Corycia semiclarata *Walk.*, May. Azelina hubnerata *Gn.*, June. Acidalia inductata *Gn.*, June. Plagodis alcovlaria *Gn.*, June. Fidonia notataria *Walk.*, June. Petrophora populata *L.*, May.

By a comparison of these lists it will be evident that this region affords a rich field for collecting. Many additional species, and possibly new forms, may yet be discovered, especially when we consider that the insect fauna of the mountainous portion is still practically unknown.

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NOTES UPON LARRADÆ.

By Wm. Hampton Patton, Hartford, Conn.

LIRIS.

This genus, founded upon a male type with peculiar tarsi, may be characterized as follows: Mandibles not dentate without, but with a shallow median notch; ♀ mandibles dentate within, ♂ mandibles not dentate within. Marginal cell pointed, not appendiculate, reaching as far as third submarginal cell. Ocelli and metathorax as in *Tachytes*.

Liris coxalis n. sp.—Clypeus rounded and somewhat produced at apex; fore coxæ of male separated by two slender processes of prosternum, of female contiguous. Length about one inch; Florida. Black; mandibles, except apical third, tawny; tarsi, at least in the middle, brown. Face with tawny pile; posterior tibiæ of ♀ and anal valve of ♀ with brown hairs, anal valve of ♂ silvery; thorax and first segment with pale hairs; ♀ apex of segments one and two, ♂ apex of segments one, two and three, silvery. Tegulæ and wings pale ferruginous, apical third fusco-violaceous. Resembles *Tachytes elongatus* Cr. in coloration, and is but little longer.

TACHYSPHEX.

Represented in this country by *Larra analis* Fab.; it is scarcely a distinct genus. It differs from *Larra* only in the hind ocelli being oval, and the metathorax resembling *Lyroda*. Other sections of *Larra* and *Tachytes* have as good a claim to a generic name.

LARROPSIS n. gen.

LARROPSIS TENUICORNIS (*Larrada tenuicornis* Smith) Type. Second submarginal cell petiolate. Resembles *Ammosphecidium* in many characters, but differs in many others. I have taken this species in Connecticut and upon the calyx nectar-glands of *Tecoma* in Virginia.

LYRODA SUBITA Say.—This species is peculiar for its non-fossorial tarsi, and may belong to *Didineis* (nec *Alyson*). Its method of carrying *Nemobius*, which it catches to feed its young, is interesting. It holds the cricket by clasping the base of the antennæ between its mandibles and clypeus, the minute teeth here preventing the antenna from slipping—this explains the use of the teeth on clypeus.

BOTHYNOSTETHUS = PISONITUS Shkd. = SILAON Picc.

Tachytes cœlebs Pttn. is ♂ of T. ABDOMINALIS.

Larra divisa Pttn. is ♀ of L. ÆTHIOPS Cress.

TACHYTES MANDIBULARIS Pttn.—This species is common in Hartford, forming hillocks, three or four inches in height and the same in breadth of base, upon sidewalks and lawns about September first. It stores up *Xiphidium* for its brood.

Equatorial Africa promises another treasure to civilization. It is a much scented plant, the branches of which carried about the persons will frighten away mosquitoes.—*Philadelphia Record.*

A CONTRIBUTION TO THE ODONATA OF MAINE.—II.

Specimens taken near Orono, Penobscot County, Me., 1891.

By F. L. HARVEY, Orono, Me.

(Continued from Vol. II, Nos. 3 and 4, 1891.)

Tribe I.—AGRIONINA.

Subfamily 1.—CALOPTERYGINA.

1. *Calopteryx maculata* Beauvois.—Though very abundant last year, was very scarce this season. Specimens were taken, June 13th, in swamps in deep woods, but we visited the locality about the same date where they were abundant last season, but took none. Can it be that this species requires more than one season to transform?

2. *C. æquabilis* Say.—This species seems to be scarce; took a single specimen June 13th.

Subfamily 2.—AGRIONINA.

4. *Argia putrida* Hagen.—Specimens taken June 20th, over roads.

6. *Ischnura verticalis* Say.—Taken June 13th, but no orange forms observed until July 22d, when they were common, but were not observed mating.

8. *Enallagma Hageni* Walsh.—Taken June 13th and 20th, and July 22d.

39. *Enallagma signatum* Hag.—July 23, 1891, Chemo Stream near the lake; quite abundant. As many as fifty seen in patches of *Juncus* and over lily pods. We were botanizing with some friends, and had time to take only five specimens. We went to the locality July 28th, and not a single specimen could be found. There had been a heavy rain between the dates. Hagen gives the habitat of this species as Georgia and Louisiana.* Mr. Calvert writes that it occurs about Philadelphia, Pa. To find it abundant so far North is certainly interesting.

40. *Enallagma pollutum* Hag.—July 23, 1891, Chemo Stream with the above, but not so abundant. Several seen, however, but only three taken. On July 28th a single specimen was seen and taken. This species is recorded only from Florida (Hagen, 1861, p. 84) so far as we know. To find this southern species so far North, and no intermediate localities, is, indeed, remarkable.

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* Baron de Selys (1876) adds Maryland and Illinois.—P. P. C.

Tribe II.—ÆSCHNINA.

Subfamily 3.—ÆSCHNINA.

17. *Æschna* (*Basiæschna*) *Janata* Say.—Reported from College collection, but taken this season, July 6th and 12th, Orono and Chemo Stream.

41. *Æschna* (*Fonscolombia*) *vinosa* Say.—July 12th and 28th, two females taken on window-screen in the evening. They seemed to be attracted by the light.

Subfamily 4.—GOMPHINA.

22. *Gomphus exilis* Selys.—Reported from College collection, but taken this season in abundance at Orono along the border of woods, June 20th.

23. *Gomphus spinosus* Selys.—Reported from College collection, but taken June 15th this season at Orono over a swamp.

42. *Gomphus brevis* Selys.—June 20th; border of woods, ♂ and ♀. One specimen, ♂, differs from the type by being larger; absence of the small tooth at the rear of the eye near the occiput; the pterostigma dark brown instead of pale yellow, and the anterior femora entirely black instead of yellow below on the middle. Mr. Calvert, to whom the specimens were referred, says: "They differ somewhat from the original description, but as this was drawn up from a single ♂ from Schoharie, N. Y., and a single ♀ (with the last 7 abdominal segments wanting) from Port Neuf, Canada, the differences are perhaps only those of individuals." There is a single ♂ of this species in the collection of the late Anson Allen, of Orono, Me., but the exact locality is not given. This species is closely related to the following species which was taken along with it and *G. exilis* the same day at the same locality.

43. *Gomphus abbreviatus* Hagen.—June 20th, back of college woods. Several males and females; associated with the above. Orono, Me.

44. *Cordulegaster maculatus* Selys.—June 11th. Very abundant over Sunk Haze Stream, Greenfield, Me. The specimens were nearly all males, only one female was taken. They were following the stream up and down, and by our wading to the middle in a shallow place, were readily taken.

45. *Cordulegaster* (*Zoræna*) *diastatops* Selys.—A single ♂ of this species is in the collection of the late Mr. Anson Allen, of Orono, Me., and was taken in the vicinity of Orono.

(To be continued.)

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

TO OUR SUBSCRIBERS :—This number of the NEWS contains thirty-two pages, an illustration, a review of the literature for a month, identifications of insects for subscribers and free exchange notices. Do you appreciate all this? Do you realize that the price for which you get this is ridiculously low? This is all a labor of love for your benefit and to advance entomology. We tell you this because we are ambitious to make the NEWS a model entomological journal, but to do this we need your assistance and encouragement. If you want to see the NEWS grow and thrive you must do your part. Send us the names of all your entomological friends so that we may send them sample copies. Try and induce others to subscribe. We already have a large subscription-list, but we do not wish to stop where we are at present; we wish to produce an illustrated monthly magazine of entomology which will be the best of its kind in the world; but with all our gratuitous labors in such a good cause, we will fail without your assistance. Remember, that the time we devote to this work is stolen, and that it could be far more profitably spent if we considered pecuniary reward. We depend on you to see that it is not love's labor lost.—ED.

DURING the year 1890 an idea originated among the members of the Feldman Collecting Club which we think is destined to influence the future of entomology in this country and bear good fruit. The idea referred to was the excursion planned for the fourth of July, 1890, at Jamesburg, N. J., at which place the members of the entomological societies of Philadelphia, Brooklyn and New York met. Two of these excursions have been held, and accounts of them have been published in the Entomological News and "Canadian Entomologist." Every entomologist knows what a stimulus it is to find some one else as interested in the study as himself, and what additional pleasure it is to have a companion on a collecting trip, with whom we can compare notes and show our interesting captures; and there is also a generous rivalry which induces us to put forth our best endeavors. At Jamesburg, students and collectors who had corresponded or known of each other for years, had the pleasure of becoming more intimately acquainted and a hearty hand-shake, and a pleasant chat and a comparing of notes was seen on all sides. Now what we propose, is to carry this idea farther and organize a National Association, to be composed of the different State organizations. The objects of such an association would be the encouragement of entomological studies, to bring about the acquaintance of those interested in entomology in each State, for the purpose of studying geographical distribution of insects, purposes of exchange, social collecting or field meetings, and for mutual encouragement. An annual dinner might be given and papers read and discussed by the members. Much progress has lately been made in entomology in this country, and its importance as a study is being more fully recognized as time goes by. We hope soon to see such an organization formed in every State and Territory in the Union, with its president, treasurer and secretary. The News will be much pleased to hear of any State taking the initiative, and will gladly publish the name of its officers and members. Some time ago a prominent entomologist from a Western State visited us, and, in talking over matters of mutual interest, we found that he did not know of half those interested in entomology in his own State. Now, it should be the duty of the State secretary of the organization to keep a complete list of all entomologists in the State, with their addresses and order or orders in which they are interested, and send a printed copy to each member, and from time to time notify them of additional names. This article is only in the way of a suggestion, and many other interesting outcomes of the plan may appear and details carried out later on.—Ed.

Rocks.—An entomological friend, to whom I once sent a letter bristling with questions, replied, after a long silence, in explanation: "Remember it is about 999 times easier to ask questions than to answer them!" The questions and problems suggested by Messrs. Mason and Tough in Entomological News, are easily asked or stated, but there the simplicity ends.

In an old country like Europe, where there is a large population, with many that are interested in Entomology, illustrated works such as those suggested are feasible, and are in existence. In some cases wealthy amateurs publish expensive works, beautifully illustrated, without hope or expectation of return; while in others, the comparative cheapness of reproductive methods allows of publications at a reasonable price, with a less sumptuous illustration. In our country the number of those interested is so small, that publication must be at a loss even if the illustrations be of the least expensive character consistent with accuracy and definition. Photography will do much, but there are many species, especially among the moths, in which it can give us an outline, and in which it fails to give shades or even contrasts of color where the two colors affect the plate similarly. The orthochromatic plates help somewhat, but do not solve the problem entirely.

I think I can safely say that all of my colleagues in the work on the "List" would be willing to contribute to publications such as suggested, could they be ensured against financial loss—recompense they would not expect. I know of at least two monographic works that cannot be issued in the shape in which they were planned, simply because of the cost and the absolute hopelessness of getting back the outlay. No publisher will touch them, except at the authors' expense, and the authors are not wealthy. But, after all, are the "Rocks" so formidable, and would the illustrations really do much to advance the *study* of Entomology? Mr. Meyrick is opposed to all illustration of species because he thinks the figures will be used to identify specimens without recourse to the text for a knowledge of characters. While I do not agree with him fully, I think there is no reasonable cause for complaint where monographic works on a family are at hand, even if not illustrated. Of course it means study, but no one who is really interested will shirk study. That interest which goes only to the collection of specimens and naming them by pictures, without any further object, is scarcely worthy of much attention. We have books enough for those who want to study, and never have there been so many papers of a monographic character issued, as in the few years last past. The fact that our fauna is incompletely known is no objection to monographic work. A very serious trouble, however, which is really the greatest "Rock," is the fact that the publications that do exist, are usually not accessible, except in large cities, and often not then. Yet, even this trouble is gradually disappearing, and the newer publications, on which ENTOMOLOGICAL NEWS keeps its readers posted, largely render reference to older and more rare works unnecessary. Meanwhile, I will suggest that there is scarcely a specialist who will not gladly name for the collector such material as is sent him, or who will not give what aid is in his power to the young student. Finally, I will make a definite proposition: If three hundred and fifty subscribers could be obtained for a monograph of the Noctuidæ to be issued in monthly parts, each part to cost fifty cents, and to be illustrated by at least one quarto plate with necessary descriptive matter, I would agree to prepare such a work. Number of parts not stated.—JOHN B. SMITH.

THE special bulletin of the Massachusetts Agricultural College just issued contains an interesting account of the gypsy moth, *Ocneria dispar*, by Prof. C. H. Fernald. The State of Massachusetts is making a noble fight against this most destructive insect. Two years ago the State appropriated $50,000 for this work; last year $50,000, and it has lately appropriated $75,000 for the work of the coming year. They are doing everything possible to disseminate a knowledge of this insect among the people, having published a special report, with colored figures, of the insect in its various stages. Prof. Fernald, in his interesting account, says that there is a statement in the second volume of the "American Entomologist," published in 1870, "that only a year ago the larva of a certain Owlet moth (*H. dispar*), which is a great pest in Europe, both to fruit and forest trees, was accidentally introduced by a Massachusetts entomologist into New England." He then gives an interesting account of its distribution, food-plants, enemies, how to destroy them, etc. This method of introduction should be a warning to entomologists. We have had sent to us from foreign countries living injurious insects packed in paste-board boxes which were partly crushed in the mails and in the best possible condition for naturalization.

Mr. CHAS. DURY, in vol. xiv, p. 183 of the "Cincinnati Journal of Natural History," gives an interesting account of the inhabitants of a field mouse nest: "I went to an old orchard, and under the first log rolled over I discovered a nest, and secured a mouse as she rushed out. She proved to be the 'short-tailed meadow shrew,' *Blarina brevicauda* (Say). I lifted the nest into the sifting-net and sifted it over a sheet of white paper, and was overwhelmed at the result. The fine débris was a jumping, crawling mass of insect life: beetles, fleas, ticks and larvæ. There were over a hundred large, vicious-looking fleas, most energetic biters. How the mouse could live in such a den is a mystery. There were 107 *Leptinus testaceus*. The other beetles associated with the *Leptinus* were Staphylinidæ, or 'rove' beetles of species new to me."

Mr. THOS. E. BEAN contemplates collecting during the Summer of 1892 on the mountains of the central range in the vicinity of Laggan and Hector (Can. Pacif. Railway), at summit of Kicking Horse Pass, and in the most accessible part of the Bow Valley. He will give particular attention to alpine work, and collect all orders of insects.

IN the March number of the NEWS, on page 70, there appeared a short article put in by the printer to fill out the page, and he neglected to label it "Newspaper Entomology." This describes a most curious hybrid insect (probably hybrid between a tarantula and a scorpion) which stings and bites with one end and stings with its tail at the other. If it were not stated that the insect was a spider we would think the Doctor specialist who treated the sting or bite, had a scorpion in his mind. It is very doubtful whether a scorpion can sting itself in the back as the sting points the wrong way for this manoeuver. We see many curious insects described in the daily press, and one we described in the NEWS turned out to be a new genus and species (*Electričia tomfooleryensis*), vol. ii, p. 54.

Mr. PHILIP LAURENT, of Philadelphia, thinks of going to Colorado on a collecting trip, during the coming season.

Prof. C. H. FERNALD is writing a descriptive work on the Microlepidoptera, to be entitled "Manual of the Microlepidoptera of N. America" This will be a very important contribution to the subject, and should greatly increase the number of persons interested in this department of Lepidoptera. Prof. Fernald will be his own publisher.

TRANSACTIONS of the American Entomological Society, vol. xix (1892).—Pages 25–40 inclusive, have been printed since our last issue, containing the conclusion of Dr. Horn's "Study of Amara, s. g. Celia," and the first pages of his "Random Studies of North American Coleoptera."

PREVENTION OF THE PEACH YELLOWS AND ROSETTE, AS CAUSED BY THE YELLOWS MITE.—The Peach Yellows is caused by the mite *Briobia pratensis*, as noted by me in ENT. NEWS for December, 1891. Its orange-colored eggs cover the bark in Winter. The mite is also destructive to grass and clover, as noted in "Insect Life" for September, 1890. The Peach Rosette is an after effect of the Yellows, hence the cause is the same. Trees rarely live more than a year after the mites attack them. The mites are classed among those that spin silk, and are readily transported from tree to tree by the wind carrying them upon their silken webs. It has been recommended to root up infested trees, and New York State has a law requiring it, but the discovery of the cause of the Yellows will require a modification of the law, as other remedies may be easily applied. Carbolic soap washed upon the trunks and twigs in Winter will readily destroy the mite eggs, and whitewash similarly applied will also be a good preventative. A spraying of kerosene emulsion, or of pyrethrum in solution, upon the affected trees would also destroy the mites. An investigation of the hatching of the eggs in Spring is needed. The orange-colored mites in contrast with the green of the leaves produces the yellow tint giving rise to the name of the disease.—W. H. PATTON.

PASSENGERS on the Ninth Avenue elevated road, New York, have watched for the past three years a sightly pile slowly growing into shape in Manhattan Square. Those who did not know already what the building was, easily learned from their neighbors that it was the new addition to the Museum of Natural History. On the fifth floor will be arranged the ethnological and entomological collections. The recent additions to the latter are many. Among them are the Elliot collection of New York butterflies, presented by the widow of Mason S. Elliot, of Brooklyn. It contains 30,000 specimens. Her husband's collection of 10,000 volumes of natural history was part of the gift. The Angus collection of 14,000 moths and butterflies is another new exhibit. Of Catocalæ alone, Mr. James Angus informed me that there were over 1100 specimens, the labor of forty years' collecting, and that he never took any at sugar.

R. E. KUNZE.

MERISUS IN EUROPE AND IN AMERICA.—It seems probable that the importation of the European parasite of the Hessian Fly will result as unfortunately as did Prof. Riley's introduction, some years ago, of the

European *Apanteles* parasitic on the cabbage butterfly. In the latter case the only result was the discovery that the insect had been well known in America for fifty years past. So with the *Merisus*, there are no specific characters to separate *nigripes* from our well-known *M. destructor* (Say) and all the species referred to this genus in this country are synonyms. In fact the genus contains but one species. The subgenus *Homoporus* was founded upon dessicated or worn specimens, and the other subgenus named by Thomson was similarly founded upon imperfectly developed individuals. I have bred *M. destructor* Say from the chrysalids of *Orgyia leucostigma* at Hartford; an hitherto unknown host for the species, affording the peculiarity of many (often up to 100) flies emerging from one pupa, whereas in the Hessian Fly each pupa affords room for but one parasite.

WM. H. PATTON, Hartford, Conn.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Insects have been named for W. W. Newcomb, W. E. Longley, Geo. Miller, D. S. Harris, W. M. Hill, H. Caracciolo, H. C. Denslow, A. A. Wright, H. E. Weed, W. Metcalfe, A. Sheriff, Frank H. Johnson, A. G. Weeks, Jr.

Entomological Literature.

To those who can master the German language there is no work published in recent years which will give greater assistance to the student of Coleoptera than the "Coleoptera of Middle and Southern Europe," by Dr. L. Ganglbauer. The work is filled with useful tables, and abundantly illustrated by well-executed wood-cuts of details, which will be found extremely useful. It would be difficult to make any adverse criticism, except that based on purely personal opinion, and to this extent his method of separating the tribes of Carabidæ seems not that which will enable the student to make the most certain progress. The first volume, containing the Cicindelidæ, Carabidæ and Dysticidæ, is all that has thus far appeared.

ACTA SOCIETATIS PRO FAUNA ET FLORA FENNICA, vi, Helsingfors 1889–90.—Enumeration of the Brachelytrous Coleoptera of Finland: II. Pselaphidæ and Clavigeridæ,* J. Sahlberg (1889).

SCHRIFTEN DES NATURWISSENSCHAFTLICHEN VEREINS FUR SCHLESWIG-HOLSTEIN, viii, 2, Kiel, 1891.—Contributions to the insect fauna of Schleswig-Holstein, iv, v, W. Wuestnei.

COMPTE RENDU. SOCIETE DE BIOLOGIE (Paris), Jan. 29, 1892.—On a Stratyomid Dipter (*Beris vallata* Forster) imitating a Tenthrid (*Athalia annulata* Fabr.), A. Giard. The wandering cricket (*Schistocerca peregrina* Ohr.) and its changes of color, J. K. d'Herculais.—Feb. 5, 1892.—On a hemipter-heteropter (*Halticus minutus* Reuter) which ravages the arachid plantations in Cochin China, A. Giard.—Feb. 20, 1892.—Structure of an abdominal ganglion of *Melolontha*, A. Binet.

LE NATURALISTE (Paris), Feb. 1, 1892.—*Papilio machaon* L. and its different varieties, L. Austaut. Descriptions of new Lepidoptera,* P. Dognin.—Feb. 15, 1892.—The woody cecids of *Rubus*, E. Ballé, figs. Deformities observed in Coleoptera, L. Planet, figs.—March 1, 1892.—Descriptions of new Lepidoptera,* P. Dognin.

TERMESZETRAJZI FUZETEK xiv, Budapest, 1891.—Exotic Myriapoda in the zoological collection of the University of Heidelberg,* Dr. E. v. Daday, 1 pl. New Tenthredinidæ and Siricidæ,* A. Mocsary.

ANNALS OF THE NEW YORK ACADEMY OF SCIENCES, vi, 1–4, New York, 1891.—Coleopterological notices, T. L. Casey.

ENTOMOLOGISCHE NACHRICHTEN (Berlin), xviii, 2, January, 1892.—New Histeridæ (Coleoptera),* J. Schmidt. On the occurrence of halophilous *Saldae* in Lorraine, J. J. Kieffer.—3. February, 1892. Notes on the beetle fauna of Brunswick, Dr. K. M. Heller. Ichneumonid and Tryphonid studies, Dr. Kriechbaumer. The Zoocecidæ of Lorraine iii, J. J. Kieffer.

OUTLINES OF ENTOMOLOGY.—Prepared for the use of farmers and horticulturists, at the request of the secretary of the State Board of Agriculture and the State Horticultural Society of Missouri. By Mary E. Murtfeldt, Kirkwood, Missouri. Jefferson City, Mo. Tribune Printing Co., State printers and binders, 1891. Pp. ii, 132, iii, 48 wood-cuts. This elementary work describes the structure of insects in general, after which each order is separately considered as regards its various groups with their chief characteristics and habits.

A List of some of the catalogues and local lists of North American Coleoptera.—I. (A–G) II. (H–P) III. (R–Z) By John Hamilton and Samuel Henshaw (Psyche, October, December, 1891; January, 1892).

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* Contains new species other than North American.

BULLETIN DE LA SOCIETE PHILOMATHIQUE DE PARIS (8), iii, 4, 1891.—Contributions to the embryogeny of the Chalcidians, preliminary note, L. F. Henneguy, figs.

ZOOLOGISCHER ANZEIGER (Leipzig), Feb. 1, 1892.—To the knowledge of the biological relations between host and parasitic bee-larvæ, C. Verhoeff. On the American Intermediate Host of *Echinorhynchus gigas*, C. W. Stiles [*Lachnosterna*].—Feb. 15, 1892.—Self-mutilation among grasshoppers, F. Werner. To the knowledge of cone-lice (*Lachnus*), N. Cholodkovsky.

ANNALS AND MAGAZINE OF NATURAL HISTORY (6), ix, 50, February, 1892.—Descriptions of new genera and species of Pyralidæ contained in the British Museum collection,* W. Warren.

COMPTE RENDU. SOCIETE ENTOMOLOGIQUE DE BELGIQUE, Jan. 8, 1892. [misprinted 1891] New species of Heterocera from the Dutch East Indies,* F. J. M. Heylaerts. The Coccinellidæ of Chota-Nagpore,*† J. Weise. List of the Hemiptera of Belgium: II. Homoptera, E. Coubeaux.

SEVENTEENTH REPORT OF THE STATE ENTOMOLOGIST on the Noxious and Beneficial Insects of the State of Illinois. By S. A. Forbes, Springfield, Ill., 1891. Pp. 90, 36, ix., 7 pls. 1 portrait of Wm. LeBaron.

REVUE SCIENTIFIQUE DU BOURBONNAIS II, 2, Moulins, February, 1892, *Bittacus tipularius*, R. Martin.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xix, 1. Philadelphia, Feb., 1892.—Studies in Chrysomelidæ, G. H. Horn, M.D.

BRITISH NATURALIST (London), February, 1892.—Portrait of H. T. Stainton. Preliminary list of Hymenoptera-Aculeata of Lancaster and Cheshire, W. Gardner. Dragonflies, F. Milton.

ENTOMOLOGY FOR BEGINNERS. By A. S. Packard, M.D., Ph.D. Third edition. Revised. New York, Henry Holt & Co., 1890. Pp. xvi, 367, 273 figs.

ENTOMOLOGISK TIDSKRIFT (Stockholm), xii, 1, 2, 1891.—New Brazilian species of scorpions,*† T. Thorell, 1 pl. New Longicorn Coleoptera,*† C. Aurivillius, figs.; and papers in Swedish on Scandinavian insects.

PROCEEDINGS U. S. NATIONAL MUSEUM xiv, 881, Washington, 1892.—The biology of the Hymenopterous insects of the family Chalcididæ, L. O. Howard.

SPECIAL RRPORT OF THE STATE BOARD OF AGRICULTURE, Boston, 1892.—On the work of extermination of the *Ocneria dispar* or gypsy moth by C. H. Fernald, 26 pp. 6 pl.

ATTI D. REALE ACCADEMIA DEI LINCEI (Rome), Rendiconti, Jan. 17, 1892.—On Termite societies, B. Grassi.

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* Contains new species other than North American. † Contains new genera.

JOURNAL OF THE INSTITUTE OF JAMAICA (Kingston), i, 2, Feb., 1892.—A Tachinid bred from *Protoparce Jamaicensis* Butl. in Jamaica, C. H. Tyler Townsend. A first contribution to the entomology of Bath, Jamaica, T. D. A. Cockerell. The larva of *Danais Jamaicensis* Bates, C. B. Taylor.

IOWA AGRICULTURAL EXPERIMENT STATION, Bulletin No. 15.—Des Moines, November, 1891. Reports on injurious insects, H. Osborn and H. A. Gossard.

ENTOMOLOGIST'S MONTHLY MAGAZINE (London), March, 1892.—On the origin of ants' nests, W. W. Smith. Notes on the synonymy of several West-African Lycænidæ, H. H. Druce. Another addition to the British fleas, E. Saunders. Synonymical notes on Cynipidæ and Formicidæ, P. Cameron. Migrations and new localities of some Coccids, W. M. Maskell. Annotated list of British Tachiniidæ,* R. H. Meade. Neuroptera of the Channel Islands, W. A. Luff, R. McLachlan. The butterflies of Rawal Pindi and the Murree Hills (Punjab), N. Manders. Notes.

MEMORIAS Y REVISTA DE LA SOCIEDAD CIENTIFICA "Antonio Alzate," v, 3 and 4, Mexico, 1892.—General protective resemblance in the Mexican Lepidoptera of the genus *Ithomia*, Prof. A. L. Herrera.

COMPTE RENDU. ACADEMIE DES SCIENCES (Paris), Feb. 22, 1892.—Structure of the larval nervous system of *Stratiomys strigosa*, F. Henneguy and A. Binet.

VERHANDLUNGEN DER K. K. ZOOL.-BOTAN. GESELLSCHAFT IN WIEN, xli, 3, 1891.—New Termitophilous insects, with a review on Termite guests,*† E. Wasmann, 1 pl.—4, 1891. On the grasshopper swarms in Algeria, Dr. C. B. v. Wattenwyl. Descriptions of new varieties of Bombycidæ from Syria, A. Rogenhofer. Swimming butterflies, Dr. S. Klemensiewicz.

BULLETIN OF THE AGRICULTURAL EXPERIMENT STATION OF THE UNIVERSITY of Tennessee, iv, 3, July, 1891, Knoxville, Tenn.—The true bugs or Heteroptera of Tennessee, H. E. Summers, figs.

CANADIAN ENTOMOLOGIST, March, 1892.—Miscellaneous notes on butterflies, larvæ, etc., W. H. Edwards. *Pamphila manitoba* Scud. and its varieties, H. H. Lyman. New species of Pyralidæ, G. D. Hulst. Notes on N. American Tachinidæ, etc., v, C. H. T. Townsend. Getting butterfly eggs, W. G. Wright. *Amblyopone pallipes* Hald., W. H. Harrington.

THE ENTOMOLOGIST (London), March, 1892.—*Ephestia kuhniella* R. Adkin. Entomological pins, Dr. D. Sharp. *Arctia caja*, J. Arkle. Notes on the synonymy of Noctuid moths, A. G. Butler. Coleoptera from Central China and the Korea,* Rev. H. S. Gorham. Notes, etc.

SITZUNGS-BERICHT D. GESELLSCHAFT NATURFORSCHENDER FREUNDE ZU BERLIN, Jan. 19, 1892.—Insect remains from the peat strata of Klinge, H. Schaeff.

*** Contains new species other than North American.** **† Contains new genera.**

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

MYRIAPODA.

Spirostreptus flavocingulatus Daday, Termeszetrajzi Fuzetek xiv, p. 137, tab. vii, fig. 4, Calif. *Rachis californicus*, p. 142, tab. vii, fig. 12, Calif. *Scolopendra viridilimbata*, p. 148, N. Am.

LEPIDOPTERA.

Pyralidæ: *Monocona* n. gen. Warren, Ann. and Mag. N. H. (6), ix, p. 173. *M. rubralis* id., p. 174, Calif. *Mimoschinia* n. gen. p. 174; type *Botys thalialis* Wlk. *Noctuelia flavifimbrialis*, p. 174, Calif. *Aporodes versicolor*, p. 175, Washington. *Pyrausta coccinia*, p. 176, Calif. *Syllythria subricalis*, p. 177, Calif. *Myelois fructetella* Hulst, Can. Ent. xxiv, p. 59, Ariz., Tex. *M. elegantella*, p. 59, Washington. *M. texanella*, p. 60, Tex. *M. leucophaeella*, p. 60, Iowa. *Acrobasis cirroferella*, p. 60, Tex. *Salebria levigatella*, p. 61, Mass., Wis. *S. purpurella* p. 61, N. Mex. *Zophodia bella*, p. 61, Mass. *Ocala* n. gen. p. 61. *O. dryadella*, p. 61, Fla. *Diviana nymphaeella*, p. 62, Fla. *Chipeta* n. gen., p. 62. *C. perlepidella*, p. 62, Fla. *Lipographis subosseella*, p. 62, Bahamas, W. I. *Paralipsa decorella*, p. 63, N. Y., Ont. *Loxostege baccatalis*, p. 63, Tex.

Papilio Hollandii Edwards, Can. Ent. xxiv, p. 50, Col.

HEMIPTERA.

Halticus Uhleri for *H. minutus* Popenoe (preoc.), Giard, C. R. Soc. Biol. Paris (n. s.), iv, p. 81.

Aspidiotus articulatus Cockerell, Journ. Ins. Jam. i, p. 54, Jamaica, Barbadoes.

COLEOPTERA.

Casey, Ann. N. Y. Acad. Sci. vi, pp. 9-214, describes 3 n. sp. of Cucujidæ; 1 n. sp. Elateridæ; 3 Scarabæidæ; 6 n. gen., 46 n. sp. Cerambycidæ; 2 n. gen., 54 n. sp. Cistellidæ; 1 n. gen., 7 n. sp. Meloidæ; 28 n. sp. Curculionidæ; from all parts of U. S.

Euryscopa pusilla Horn, Trans. Am. Ent. Soc. xix, p. 16, Tex. *E. subtilis* p. 17, Calif. *Amara Belfragei*, p. 19, Tex. *Saxinis politula, speculifera* p. 10, Calif. *Coscinoptera seminuda*, p. 13, Ariz.

DIPTERA.

Masicera protoparcis Townsend, Journ. Ins. Jam. i, p. 70, Jamaica.

Blepharipeza exul Townsend, Can. Ent. xxiv, p. 64, N. H. *Gonia sagax*, p. 65, Iowa. *Pseudogonia ruficauda*, p. 66, S. Dak. *Plagia aurifrons*, p. 67, Pa. *Trixia gillettei*, p. 68, Col. *Millogramma kansensis*, p. 68, Kan. *Metopia Luggeri*, p. 69, Minn. *Thryptocera americana*, p. 69, D. C.

Doings of Societies.

A REGULAR MEETING OF THE ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES was held February 25th. Meeting called to order at 8.30 P.M., Dr. Horn, director, presiding. Members present: Ridings, Skinner, Martindale. Associates: Calvert, Johnson, Nell and Fox. Mr. Calvert presented the third lot of European Odonata, twelve specimens of *Gomphus*, which makes the representation of this genus pretty full. Dr. Horn presented thirty-six specimens of Coleoptera from Mexico, being lot No. 2. Specimen of *Triptogon occidentalis* presented by H. Skinner. Fifteen species of Tachinidæ; twenty-one specimens by C. H. Tyler Townsend. These are type specimens, and will make a valuable addition to the collection of Diptera. Mr. Calvert exhibited drawings representing the neuration in his new genus of dragonflies, *Ortholestes* and two allied genera of *Agrionina*. He pointed out the generic differences as shown by variation in the neuration. It was also stated that Dr. Karsch had recently described a new genus of AGRIONINA, *Neuragrion* from Ecuador, and the speaker pointed out the characters on which the genus was based. The capture of a specimen of *Pantala flavescens* was reported from Fairmount Park. Dr. Horn spoke of the mechanism of the veins in NEUROPTERA, in reference to their utility in flight, and in regard to the strength of the wing. The subject was further discussed by Messrs. Horn, Calvert and Martindale. The director announced the death of Henry Walter Bates on February 17th. Messrs. C. W. Johnson and Charles Liebeck were proposed for membership. HENRY SKINNER, *Recorder*.

THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, Feb. 4, 1892.—Under the head of short notes, Mr. Ashmead made some interesting remarks on *Eunotus*, a peculiar chalcid genus, new to the United States. It was his opinion that it belonged to the subfamily Aphelininæ. Dr. Stiles noted a report that a man in Germany had been bitten by the common house fly and died within twenty-four hours. Much discussion followed, throwing considerable discredit upon the story. Mr. Banks exhibited a male specimen of *Loxosceles* which had but six developed legs. Dr. Marx exhibited a peculiar Theridid spider which had extremely long mandibles. Dr. Stiles made some instructive remarks on a liver-fluke story that was circulating in certain papers. According to this story the young stages of the liver-fluke were passed in the house-fly, whereas they are passed in snails. Mr. Mally read a paper on "An Insectivorous Primrose." He drew attention to the fact that *Œnothera speciosa* captured a small Dipterous insect upon its gummy style and stigma. But one species was seen trapped. As the insect could not be eaten by the plant the author thought that the insects must, in some way, aid the fertilization of ovules. Discussed by Messrs. Ashmead, Test, Schwarz, Marx, Howard, Stiles and Marlatt. Mr. Howard contributed an important paper on

"Spider Parasites," being a complete revision of our knowledge of these interesting insects, both European and American. Lists and breeding notes were given and specimens exhibited. He also called attention to the habits of *Mantispa* and some Acroceridæ, which, in Europe, are known to be parasitic on spiders. Discussed by Messrs. Ashmead, Marlatt, Test, Schwarz, Fox and Marx. Dr. Stiles made a few remarks on the various Nematode genera parasitic on spiders. Dr. Marx made a few additions to his paper on ticks. Prof. Summers was invited to speak, and made some instructive remarks on collecting and labeling.

NATHAN BANKS,
Recording Secretary.

CYNIPS Q-GLOBULUS Fitch.—The galls of this species I have found upon the European oak, *Q. pedunculata*, planted in Hartford, Conn. From them I have reared a small inquilinous Cynipid and a species of *Callimome*.

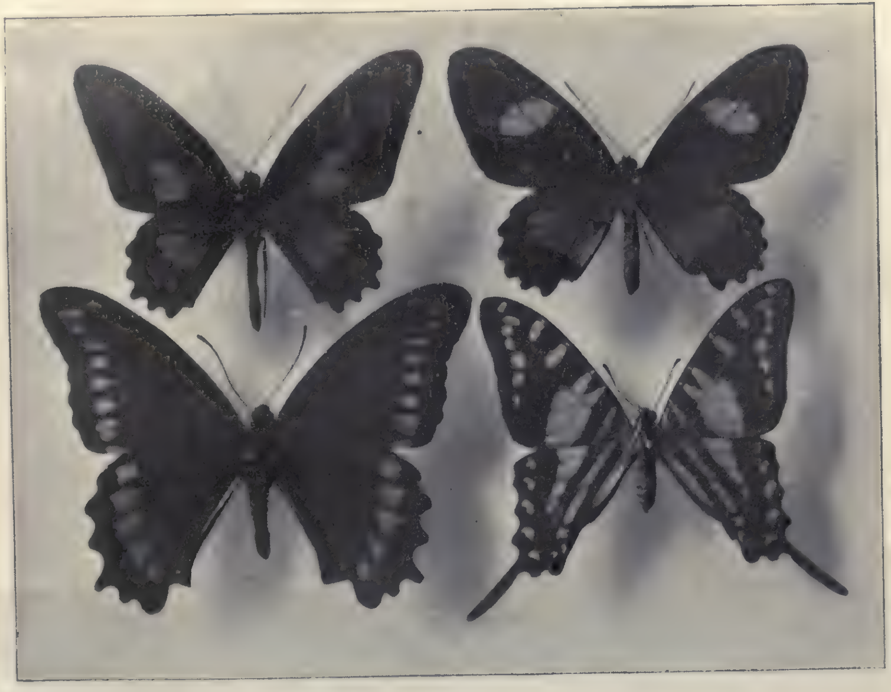
WM. H. PATTON.

THYNNUS IN CALIFORNIA.—This genus has not hitherto been found north of the Equator in either hemisphere, nor has any of the family Thynnidæ. A specimen received from Dr. F. E. Blaisdell from Poway, San Diego County, Cal., is the first intimation of its occurrence in North America. It is a small black species with hyaline wings, and may be named *Thynnus californicus*.—W. H. PATTON.

OBITUARY

ROBERT BUNKER died at his home in Rochester, N. Y., March 6th, aged seventy-one years. He was a native of Columbia County, New York. When five years of age his parents removed to Rochester and took up their residence on the site where he died. Mr. Bunker was a cooper by occupation, but spent all his spare time making entomological collections and a few years ago presented his collection to the Academy of Science at Rochester, of which institution he was a charter member. He contributed occasional papers to the "Canadian Entomologist," and to ENTOMOLOGICAL NEWS; these showed that he was an acute observer of insect life. He was, personally, a man of strong traits of character; upright and honorable in every relation of life; broad-minded, yet positive in his opinions; genial and courteous in his intercourse with friends and neighbors. His death will be sincerely mourned by his entomological friends, and by the community in which he lived.

ENTOMOLOGICAL NEWS for March, was mailed March 1, 1892.



Papilio mylotes ♂
Papilio polydamas

Papilio mylotes ♀
Papilio sinon

ENTOMOLOGICAL NEWS.

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. MAY, 1892. No. 5.

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Our illustration this month represents three species of *Papilio* which are visitors to our fauna, and for which collectors should be on the lookout. *Papilio polydamas* has been found on the Indian River, Florida, and *P. sinon* has also been found in southern Florida. *P. mylotes* is said to have been taken in southern California. *Polydamas* and *sinon* are West Indian species, and the home of *mylotes* is in Central America. The ♂ *mylotes* is of a rich black, and the spots on the superior wings are bright green; those on the inferiors are carmine. The spots on the superiors of the ♀ are cream color, and those on the inferiors of a lighter shade of carmine than in the ♂. *P. polydamas* is dark bottle-green, with light green spots on inferiors, and the spots on the superiors are cream color with a tinge of green. The negative was kindly made for the NEWS by Dr. Benjamin Sharp of the Academy.—ED.

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TWO NEW AND REMARKABLE OPHIONIDS.

By WM. H. ASHMEAD.

In 1868, Dr. Arnold Förster, of Aachen, published a remarkable work entitled, "Synopsis der Familien und Gattungen der Ichneumonen," in which no less than 36 families and 522 genera were recognized.

The work evidently took years of patient labor and research, and it has been too long neglected by European and American writers on these insects, as it contains excellent tables and hints and ideas on the classification of this difficult group, which, if worked out thoroughly, would undoubtedly aid materially in advancing a systematic knowledge of these insects. In separating the Ichneumons into so many families and genera, Förster probably went to the extreme, and this may account for the little value placed on the work by his contemporaries, but from the little study I have as yet given to his work, I am fully convinced that many of his so-called families will hold good, with some modification, as Tribes, in the sense of LeConte and Horn.

His family 20th, or the Mesochoroidæ for instance, will form a natural tribe, Mesochorini, in the subfamily Ophioninæ, distinguished by the large, rhomboidal areolet, and by the two prominent projecting anal styles in the males.

I have been led to these views by a somewhat careful study of some of the families characterized in his work, and by the discovery of two remarkable male insects that for a long time baffled me in placing—one in the National Museum and the other in my own collection—but which I find, with the aid of Förster's tables, belong to two new genera briefly characterized in his work.

In describing these two insects I have deemed it advisable to give below not only a table of the genera of this tribe, but a full generic description of these two imperfectly known genera, so that other students may easily recognize them.

Tribe MESOCHORINI.

Table of Genera.

Vertex narrowed, lateral ocelli close to the margin of the eye; claws pectinate . . . . . . G. 1. **Plesiophthalmus** Förster.

Vertex not narrowed, lateral ocelli distant from the margin of the eye.

Claws pectinate; first abdominal segment with lateral carinæ extending backward from the spiracles; transverse median nervure in hind wing broken . . . . . . G. 2. **Astiphromma** Förster.

Claws simple; first abdominal segment without lateral carinæ; transverse median nervure in hind wing not broken. G. 3. **Mesochorus** Grav.

Plesiophthalmus Förster.—Head transverse, not wider than the thorax across the wings, antero-posteriorly thin; the frons foveated; clypeus not separated; ocelli large, prominent, the laterals close to the eye margin;

eyes large, narrowed oblong, reaching almost to the base of the mandibles, sinuated within opposite the base of the antennæ; mandibles oblong, bidentate at tip; maxillary palpi long, 5-jointed, the second joint swollen two-thirds the length of the third, the following joints slender, cylindrical, the third and fifth about equal in length, the fourth a little longer; labial palpi 4-jointed; metathorax completely areolated, with linear spiracles; areolet in front wing large, rhomboidal, subpetiolate; the second and third discoidal cells about equal in length, the second abscissa of the cubital nervure strongly curved upwards; transverse median nervure in hind wing broken below the middle; tibial spurs 1, 2, 2, large, those on the middle and hind tibiæ subequal; claws strongly pectinate.

P. paniscoides sp. nov. ♂.—Length 13 mm. Pale yellow ferruginous, polished, impunctured; the head above the insertion of the antennæ and the cheeks, the last two abdominal segments and the two long anal styles black; antennæ as long as the body, slender, tapering and involuted at tips, pale at base, but becoming fuscous toward tips; the first flagellar joint is the longest, the following subequal. Thorax very slightly trilobed anteriorly, but the parapsidal furrows not distinctly impressed; scutellum convex, connected with a mesonotal ridge or carina at the sides, but with a transverse fovea at base; metathorax smooth, but distinctly areolated. Legs very long and slender. Wings clear hyaline, iridescent, the stigma and venation pale yellowish; the stigma is lanceolate, with the radius springing from a little before the middle. Abdomen slender, subclavate, subcompressed beneath at tip, twice the length of the thorax; petiole long, slender or subclavate, the spiracles situated at the middle; second segment a little shorter than the petiole; third, two-thirds the length of the second; the following segments subequal.

Hab.—Massachusetts. Type in coll. Ashmead.

Described from a single specimen received from Mr. Samuel Henshaw, and labeled as having been collected by "Bowditch."

Astiphromma Förster.—Head very broadly transverse, the frons deeply impressed, the clypeus not separated; ocelli large, close together in a triangle, the laterals their width from the eye margin; eyes large, oblong-oval, extending to the base of the mandibles; mandibles stout, bidentate at tips; maxillary palpi very long, 5-jointed, the second joint clavate, the third the longest joint, the following subequal; labial palpi 4-jointed, the second joint the shortest and stoutest, the last the longest; metathorax with a median and a posterior area; areolet of wings large, subsessile, rhomboidal; the second and third discoidal cells equal in length; the second abscissa of the discoidal nervure strongly curved upwards and not broken by a "stump of a vein" at the middle; tibial spurs 1, 2, 2, large and equal; claws pectinate.

A. pectoralis sp. nov. ♂.—Length 7 mm. Black, shining, impunctured; scape and pedicel beneath, the face and mandibles, except the teeth, yellow; palpi and tegulæ white, prothorax and meso- and meta-pleuræ pale ferruginous. Legs pale ferruginous, the anterior and middle coxæ and trochanters luteous or white; posterior legs more or less distinctly red, the apex of the tibiæ, spurs, and tips of the tarsal joints, fuscous or black. Abdomen black, the extreme apical edge of the second and third segments white; ventral segments 2 to 4 pale ferruginous, the extreme apical edges of the following segments whitish; spiracles of first segment small, round, placed at the middle; the two anal styles a little longer than the second tarsal joint, black. Wings hyaline iridescent; the stigma large, subtriangular, brown, the other nervures paler brown.

Hab.—Texas. Type in National Museum.

Described from a single specimen in the National Museum, donated by Dr. C. V. Riley.

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Studies in North American Membracidæ.—I.

By F. W. Goding, M.D., Rutland, Ill.

STICTOCEPHALA Stal.

Stictocephala gillettei n. sp. ♀.—Convex in front; on each side a lateral carina posteriorly, uniting far back of middle; superior surface of prothorax nearly flat; apex extends almost to tip of tegmina, very slender, strongly curved downward and triquetrous; along posterior half of carina is an impressed line. Head reticulate with yellow, apex hairy; a semicircular line with termini each side of apex; just above eyes on prothorax a scar; ocelli equidistant from each other and the eyes. Prothorax very coarsely punctured, grass-green; tegmina glassy-green, second and third apical cells subequal, fourth nearly as long as the two; all of tegmina more or less punctured, base coriaceous. Chest brownish green, hairy; femora green, covered with coarse hairs; tibiæ light brown, tarsi light brown, tips black. Abdomen green, ovipositor fuscous. Length 7 mm.

Hab.—Colorado. Described from one ♀ presented by Prof. C. P. Gillette, in whose honor this beautiful species is named. It may be readily separated from its congeners by the depressed, extended form, lateral carinæ extending nearly to apex; no semicircular lateral impressions, and long, very slender, strongly curved downward apex, and deep grass-green color.

TELAMONA Fitch.

Telamona rileyi n. sp.—Similar in size and form to *coquilletti* God'g; the markings are less prominent, lateral horns much less produced.

♂.—Greenish yellow, marked with ferruginous lines, punctured. Head greenish yellow, lightly punctured. Prothorax yellowish green, mottled with ferruginous, and a number of ferruginous, longitudinal, elevated lines; dorsal carina percurrent, a deeply impressed dot on each side of its base; dorsal crest somewhat elevated, much compressed, strongly compressed anteriorly at base and posteriorly behind middle, the highest point of crest at beginning of posterior third, from which point it gradually slopes anteriorly in a gentle curve continuous with anterior third of prothorax, posteriorly sloping for a short distance, then forming an obtuse angle; at the base another obtuse angle is formed, from which the median carina curves gently to the apex; lateral angles a little prominent; tegmina with basal half coriaceous, apical half subcoriaceous, a brown spot at apex. Chest below is dark yellow, coxæ piceous. Legs yellow and hairy Abdomen yellow. Length 6 mm.

Hab.—Marlo County, Cal.

Described from one ♂ from Dr. Riley, who has so kindly favored me with much valuable material from the National collection (type in collection of F. W. G.).

This species resembles *coquilletti;* the dorsal crest is reclined, while in that species it is upright.

Telamona mexicana Stal. (?) ♂.

In the material sent to me recently from the National Museum by Dr. Riley, for determination, is a ♂ member of this genus, which agrees very closely with the description of *mexicana* ♀ in Bid. Memb. K. p. 249, No. 1. It differs, however, in the absence of the brown spot on tegmina, and the legs are immaculate yellow, tips of tarsi piceous; dorsal crest nearly thrice as long as high at base.

I believe this to be the ♂ of *mexicana;* if it should prove to be undescribed it may be called *pulchra.* Length 7 mm.

Hab.—California?

PLATYCOTIS Stal.

Platycotis minax n. sp. ♀.—Pale yellow, densely punctured, very much depressed, appearing broad and flat. Head bright yellow, with a longitudinal median carina. Prothorax light yellow, a transverse linear impression just back of base on each side of carina, the impression almost a fascia; anterior horn extending upward and forward, much compressed, anterior edge nearly straight, posterior edge convex and brown; on each side of horn two or three lateral carinæ extending from base to apex; horn about two and a half times as long as broad; at posterior base is an obtuse angle, behind which is a slight convexity, thence straight to apex, which does not reach tip of abdomen; tegmina subcoriaceous, extend far beyond tip of abdomen, light yellow, veins darker; below yellow. Length to apex of tegmina 5 mm.; including anterior horn 6.5 mm.

Hab.—California.

Described from one ♀ presented by Dr. Riley.

POTNIA Stal.

Potnia asodalis n. sp. ♂.—Dirty yellow, prothorax gibbous anteriorly, gibbosity greenish. Head yellow, sculptured. Prothorax yellowish anteriorly near the base; median carina percurrent, nearly obsolete posteriorly; on each side of carina near the base two large brown punctures; in front, superiorly a large gibbosity occupying about one-half of prothorax, greenish; median carina at this point very prominent and brown; on each side, behind lateral angles a large impression, above which is a second small gibbosity; apex obtuse, not reaching tip of abdomen; punctured; tegmina with basal half coriaceous veins; apex extends beyond tip of abdomen; below yellow; tibiæ spined. Abdomen yellow. Length 5 mm.

Hab.—Marlo County, Cal.

Described from one ♂ presented by Dr. Riley (type in collection F. W. G.).

STICTOPELTA* Stal.

Stictopelta nova n. sp. ♂.—Very near to *cruenta* Burm. Head bright yellow; ocelli dark brown. Prothorax convex, with base yellow; just above base on each side of obsolete median line a broad, irregular, transverse, shining black line; from base of tegmina posteriorly the lateral borders are white, apex brown, otherwise green and shining; tegmina vitreous, veins of corium black; below yellow; tibiæ with outer surface brown; tarsi brown. Abdomen yellow. Length 6.5 mm.

♀.—Differs from ♂ only in having a broad semi-circular band of a little darker green than ground color, anteriorly, the convexity of which is forward, broken in four spots, the bases of this arched band being above the lateral angles, which are slightly produced.

Hab.—San Bernardino County, Cal. Described from two examples.

These were presented to me by Dr. Riley.

GARGARA Am. et Serv.

Gargara atlas n. sp. ♂.—Head black, a yellow spot below each eye; eyes yellow. Prothorax ferruginous, base broadly piceous; median carina percurrent, above shoulders a very large irregular gibbosity, posteriorly long and narrow; tegmina opaque, clouded with piceous; a large light yellow (white?) spot at base of tegmina, and one on the external border near apex; below black; femora black, base ferruginous; tibiæ and tarsi ferruginous, tips of latter black. Length 3 mm.

Hab.—Kern County, Cal.

Described from two examples from Dr. Riley.

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* *Stictopelta* is one of Dr. Stal's subgenera of *Darnis*. I consider it of sufficient value to be recognized as a distinct genus.

This species is very near to *variegata* Sign. from Calabar, both having a prominent lobe on the prothorax anteriorly, which may place them in a new genus. In *atlas* the tegmina are not vitreous, and have a whitish band near the base; also smaller.

Duplicates of all the new species described in the foregoing paper, excepting *Stictocephala viridis*, may be examined under the above names in the National collection. I am deeply indebted to Dr. Riley for his kindness in allowing me the privilege of studying the duplicate material in the National collection.

ENTOMOLOGIZING IN MEXICO.

By W. S. Blatchley, Terre Haute, Ind.

He who would see in the shortest possible time insect life in all its phases, from the few depauperate forms which dwell in the barren regions bordering the realms of perpetual snow to the countless thousands which bask in the genial warmth and amidst the luxurious vegetation of a tropical clime, should visit Mexico.

In less than a week one can pass on foot from the summit of Pico Orizaba, 18,000 and better feet in air, where the mercury marks daily throughout the year many degrees below the freezing point, to the level of the sea at Vera Cruz, where the mean annual temperature is above 80 degrees. In this journey the number and size of the insects met with would be increasing at every onward step, and, if carefully collected, the series would at the end represent forms from every zone on earth.

It was not my good fortune, while a member of the recent Scoville expedition to Mexico, to make this journey, but I collected in various localities from the height of 2500 feet at Cordoba to the lower limit of snow on the mountain. On account of a press of other duties no special work has as yet been done with the insects taken, and, in the present article, I propose to give some of my experience while collecting; to mention some of the most pecular and bizarre forms taken, and to note in a general way the results of the trip.

In the beginning, let me say that, whoever visits Mexico to collect insects should, unless he be a millionaire, take all necessary material with him, for, in the town of 15,000 inhabitants where we made our headquarters for two weeks, chloroform was one dollar per ounce; a cheap pine handle for a net cost twenty-five cents; empty cigar boxes were ten cents each; potassium cyanide could not be purchased, except by a special permit from the mayor, while the native alcohol was too weak to do anything but put on a temporary drunk the specimens immersed in it.

It was the late afternoon of the 20th of July when our party of four, after a long ride of over 3100 miles, passed down the slope of the Mexican railway and entered Orizaba, one of the most charming of the smaller cities of Mexico, situated as it is in a little valley in a semi-tropical region 4000 feet above sea level, and surrounded on every side by lofty mountains. Our hopes were high for the real work of the party, namely, the collecting of the different forms of animal and plant life of the region was to begin on the morrow. Those hopes were somewhat dampened, however, by the information that the rainy season was but well begun, and that the chances were that it would rain every day for a month or longer.

The first insect seen, after we had found a hotel where English was spoken and had washed some of the dust and cinders of the journey from us, was a handsome male of *Dynastes tityus* Linn. which the landlord, who was in high good humor at getting the four of us for the modest sum of fourteen dollars each per week to partake of his hospitality, brought alive to me. He assured me that his brother, who resides at Mexico City and has the largest collection of Coleoptera in the country, had sold scores of them in Europe for five dollars a pair, but when I informed him that the same species is found frequently in Kentucky, and at times in southern Indiana, he seemed somewhat taken back. However, he graciously presented it to me and volunteered to accompany me after the seven o'clock dinner for a stroll about the electric lights, where, he assured me, numerous specimens of *tityus*, as well as of many other large beetles, were to be found.

When we set out to visit the lights the rain was falling in a steady shower; but few insects were flying, and they were mostly the smaller moths. A half dozen or more large brown beetles, a species of *Xyloryctes* which I afterwards found to be very common were, however, taken from the ground beneath the lights, and a few earwigs from the walls of the houses from which the light was reflected.

On the morrow, as soon as our breakfast of bread and coffee, all one ever gets for that meal in Mexico, was despatched, I sallied forth net in hand, and, coming to the outskirts of the city entered an unfenced garden containing about half an acre and began operations. The first insects seen were many of the half-grown young of a gigantic grasshopper, *Rhomalea* sp.? black in color and in life streaked on the sides with bright crimson. They seemed to be a social sort of creature, as thirty or forty of them would be found feeding together on a single stalk of corn in much the same manner as the larvæ of certain of our moths feed in communities or droves. Unlike the young grasshoppers of this country they were very sluggish in their action, being easily captured with the fingers. After scooping up a number of them, together with many of the young and adults of a large Hemipteran, *Sagotylus confluentus* Say, which were making a meal on the leaves of a gourd-vine, I gave my attention to the butterflies, and passed the morning in that one garden, securing about seventy specimens, representing half that number of species of those attractive insects for which I was primarily in search.

And right here let me say that during that whole morning, yes, during the whole of my collecting in Mexico, I was impressed with a feeling which probably comes to every collector in a strange country—a feeling of being lost among such a multitude of forms of which one is actually in search, but knows but little about. After a naturalist has been in one locality for some time he becomes familiar with the different forms of life about him; knows, for example, most of the plants, birds and insects, if not by name at least by association. He thus becomes able to detect in an instant anything which is new or rare, and a certain thrill of delight comes to him when such a form is seen. But in a country where everything is new, where one may pick up the most common species thinking it to be rare, or, happening upon a small group of something rare, take some of them and let the rest alone believing them to be common, and afterwards, when too late, find out and regret the mistake; in such a locality the collecting, to me, loses a certain degree of its charm.

Numerous as are the insects in a tropical country, it is impossible for one person in a short time to make anything like a thorough collection in all the orders, even in a restricted locality. Lepidoptera and Orthoptera were what I wanted especially, and of them I collected every species I could find. I also took such

Coleoptera and Hemiptera as came readily to hand, while of the Diptera, Hymenoptera and Neuroptera, I took scarcely any, although large numbers of each of those orders were seen.

Of the diurnal Lepidoptera, or butterflies, over 600 specimens, representing 85 species, were taken in the eleven days spent in the vicinity of Orizaba. During that time it rained two whole and seven half days, so that the facilities for collecting them were none of the best. Of these but eight are found in Indiana, namely, *Papilo turnus;* three species of *Pyrameis*, two of which, *atalanta* and *cardui*, are cosmopolitan; the handsome *Callidryas eubule*, which is very rare in this State; *Junonia cœnia*, also a rare species with us; *Terias lisa* and *Ancyloxypha numitor*, the latter being, there as here, the smallest and one of the most abundant of the Hesperidæ.

During one forenoon I took 168 specimens, over forty species from a single field near the outskirts of the city. It was filled with brilliant flowers, and the margin, where occasional clumps of bright red flowers grew, was a favorite lurking place for many of the larger and rarer kinds. One of the most striking species, on account of its size as well as its so-called "protective mimicry," was a large and handsome *Callidryas* light yellow above and of a greenish hue beneath, which, when resting with folded wings, could scarcely be distinguished from a leaf so closely did the color and the prominent veins on the underside resemble those of a leaf.

(To be continued.)

ELEMENTARY ENTOMOLOGY.

LEPIDOPTERA-HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

Following the Sphingidæ in our catalogues and lists come the Sesiidæ. They were originally included with the clear winged Sphinges on superficial characters, and, though long since separated from them, are yet, as a rule, placed next to them. In fact, except for the superficial resemblance, there is nothing warranting any close association of the two families. So far as I am aware the larvæ of the Sesiidæ are borers, living in roots, stems and trunks of vines, shrubs and trees, sometimes maturing two broods in one season more usually annual, and rather more rarely passing more than one year in the larva state.

The imagos have moderately long antennæ, gradually and variably thickened medially, more slender apically, the tips often with a brush of hair. Rarely they are setaceous, or thread like. In the male they are often furnished with lateral tufts of bristles and sometimes with lamellæ or pectinations. The head is variably developed, usually quite small; ocelli present; tongue varying from a well developed organ to a mere rudiment. The latter character is of great importance in the systematic study of the family. The thorax is usually robust and quite closely scaled. The abdomen is long and comparatively slender in most cases, often brightly banded. The wings are narrow, the primaries longer than, but not so broad as the secondaries. They are wholly or in part transparent as a rule, and this, combined with the bright, banded maculation, gives them a wasp-like appearance that may be protective.

The venation is distinctive, and of a low type. The median cell is well developed, and all, or nearly all, the veins arise from it separately. The internal vein is wanting, or forms the internal margin itself. In the secondaries we have a very similar type of venation; but here the costal vein is missing, and there may be two or three internal or free veins. Vein 5 is often absent as well.

The legs, as a whole, are well developed, the posterior often markedly longer than the others, while the anterior are actually, as well as relatively, short without being weak.

The sexes sometimes differ quite markedly, not only in size, but in color and maculation, and it is not unlikely that some of our numerous species represent sexes of others. In habit the insects are diurnal as a rule, but have been occasionally attracted to light. The characters of most of the American genera have been given by me in "Entomologica Americana," iv, 9–13.

Somewhat allied to the Sesiidæ, in habit and appearance, are the Thyridæ. The relation between the two is superficial merely, and vanishes on study. They are small and stout, with long, strong tongue, large, projecting, bristly palpi and spindle-formed antennæ, the basal joint much enlarged. In the male they are singly pectinated. The ocelli are wanting. Thorax robust, abdomen conic and comparatively short. The legs are stout, clothed with long, stiff hair, middle tibiæ with one, posterior with two pairs of spurs. The wings are usually quite short and broad, small in comparison to the robust appearance of the insect, and with an irregular outer margin.

The primaries are 12-veined, all the veins (save the costal and submedian) separately out of the median cell. Internal, or submedian vein, forked at base. The secondaries have two internal veins, and the costal free from the base the full length of its course. In color the species are black and white, or a peculiar yellowish brown and whitish.

A CONTRIBUTION TO THE ODONATA OF MAINE.—II.

Specimens taken near Orono, Penobscot County, Me., 1891.

By F. L. HARVEY, Orono, Me.

(Continued from Vol. III, page 92.)

Tribe III.—LIBELLULINA.

Subfamily 5.—CORDULINA.

46. *Macromia* (*Didymops*) *transversa* Say.—June 6, 15, 20. Abundant in the woods, Orono, Me.

47. *Cordulia* (*Tetragoneuria*) *semiaquea* Burm.—Quite abundant over Chemo Stream during July; Bradley, Me.

28. *Cordulia* (*Neurocordulia*) *Uhleri* Selys.—Reported last season from specimens in the College collection. This season taken on several dates in June over swampy road in College woods, Orono, Me.

48. *Cordulia* (*Somatochlora*) *lepida* Selys.—July 12th one male; July 28th several males; one pair was seen mating and taken in the net, but the female, unfortunately, escaped. No other females seen; Chemo Lake near the outlet. The wind was blowing hard, and they had collected in an opening in the woods and were easily taken.

49.—*Cordulia* (*Somatochlora*) *forcipata* Scud.—June 13, 15, 16, over swamp in College woods; July 22, over Chemo Stream, Bradley, Me. This is the *Epitheca forcipata* of Hagen's Synopsis of 1875. It seems to be abundant about Orono, Me.

50. *Leucorhinia hudsonica* Selys.—June 1st seven males. Over a road near a small pond, Old Town, Me. On the Veazee Railroad half way between Stillwater and Old Town. My attention

was called to this species by Mr. J. M. Rondlette (Class 92), who saw them flying the last of May, and was with me when the specimens were taken. This species seems to emerge very early. Only one female seen, but not taken. These specimens showed much brighter colors than those assigned to them in the books.

51. *Leucorhinia frigida* Hagen.—A single specimen (♂) of this rare species was taken July 11th over Chemo Stream, Bradley, just above the dam.

52. *Diplax costifera* Uhler.—Many specimens taken July 12th along Chemo Stream, Bradley, Me.

53. *Celithemis elisa* Hag.—A single ♂ July 22d, and July 28th a dozen males. No females taken; Chemo Stream where it leaves the lake. Our specimens were much brighter than the colors assigned to this species in Hagen's description (Neur. N. A. p. 182, 1861).

REMARKS.

Additional notes upon species repoated in ENT. NEWS, Vol. II, Nos. 3 and 4, 1891, are numbered to agree with those of that article. Species reported for the first time in this article are numbered from 39 to 53.

The species found the past season include some rare forms and others remarkable for their occurrence so far North. There seems to be good reason for believing that the New England insect fauna extends along the coast of Maine and there mingles with boreal forms. The species reported above swell the number of species of Odonata to date known by us from the vicinity of Orono to fifty.

As we have made no special effort to collect these forms the indications are that the State is rich in species.

We are greatly obligated to Mr. P. P. Calvert, Philadelphia, Pa., for examining specimens and for other professional courtesies, and to Mrs. Anson Allen, of Orono, Me., for the privilege of examining the Odonata collected by her husband.

AN exchange says that Jerry Simpson, the "sockless statesman" of Kansas, it is rumored, will petition Congress for a $2,000,000 appropriation for the purpose of experimenting in crossing honey-bees with lightning-bugs, under the impression that should he succeed the bees will be able to work nights.—*Richland* (*Iowa*) *Clarion*.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., MAY, 1892.

Entomological rubbish.—Why is it that in this country our entomologists get so many poor and imperfect specimens? and when they do secure them make matters worse by running pins through them out of all proportion to the size of the insect. In Europe they do these things far better, but it may be said that Europe is an older country, and that they have had many years in which to learn entomological technique; true, but the difference in the perfection of the specimens and in the mounting seem out of all proportion to their respective ages. Some time ago a well-known collector wished to know why so many poor specimens came in exchange from Philadelphia entomologists; our reply was, that none of them were caught in Philadelphia, but had been received from other parties. He already had all our local species and those sent were from other places. It is time we had learned dexterity in catching specimens so that they are not ruined. Neatness in pinning, expanding and mounting, will greatly enhance the value of a specimen, and it will receive more respect and be much more likely to be preserved. If a large, heavy species has a No. 1 pin in it and you attempt to move it from place to place, the chances are the pin will bend and the specimen be ruined. It is a common thing to find No. 4 pins put through our smaller moths and butterflies, and these pins pointing at the cardinal points of the compass. Seek your specimens at the proper time, while they are fresh, and catch and kill them in such a manner that they wont look as though the cat or the baby had been playing with them. Use a pin in proportion to the size of the insect, and remember it goes through either the middle of the thorax or the right elytron, and should be exactly perpendicular. Always have a uniform length of pin above the thorax (⅜ inch.), and it is best to make a little measure to test this if you wish your specimens to look well and be a uniform height on the pins. For Macrolepidoptera use Nos. 2, 3 and 4, Klaeger pins, and for Micros use the silver pins (Klaeger) that come specially for them. These micro pins are fastened to an ordinary No. 3 or 4 pin. Any insect that is too small for a No. 2 Klaeger pin should be mounted on card-board; in other words, *never use a finer pin than a* No. 2 *in any of the orders.* In spreading Lepidoptera be careful to *have the interior margins of the superior wings make a straight line.* Let us inaugurate an era of well-caught and nicely-mounted specimens. It is almost as easy to do the thing right as wrong, and the NEWS hopes to live to see the time when entomological rubbish will be a thing of the shadowy past.—ED.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

INCIDENTS OF WORK.—In the fall of 1890 I visited a country place in the southern part of the State for the purpose of investigating the habits of the screw worm (*Compsomyia macellaria*). Desiring to watch the work of the species without interruption, I secured a nearly dead sheep in the shade of a tree about fifty yards back from the public road and sat myself down beside the sheep to watch the larvæ in their work. Occasionally flies were caught in the hand and put in the cyanide bottle, or when a full grown larva dropped from the wounds for pupation it was put into earth in a bottle brought for that purpose. Thus a full half day was spent beside the sheep. But my doings had not been unobserved, as passers by had watched with amazement a stranger in their midst catching flies from a nearly dead sheep, and it was soon known in the little hamlet that the bug man who had arrived the night before was catching flies to eat. Imagine my surprise after reaching my hotel to be surrounded by a group of listeners who asked if the flies were really good to eat? how long had I lived off such truck? and if the flies were eaten to cure any disease, etc.? My explanations, however, were satisfactory to most of those present, although when I explained that the parents of the screw-worms were small flies and exhibited specimens, several knew as well as they knew anything that I was mistaken, as a prominent physician of the town had shown that the parent of the screw-worm was a species of wasp. The physician had actually shown this to be the case by squeezing a live screw-worm from the abdomen of the wasp. One of the listeners was so sure that the parent of the screw-worm was a wasp that h was willing to back up his statement with a good financial consideration. But upon my offer to put up a like amount, he was afraid to have the subject decided by trial owing to the difficulty it would be to get the right species of wasp. A merchant recently told me of a conversation he had had with a farmer about a recent bulletin of the Station treating of the black weevil (*Calandra oryzæ*), which was about as follows:

Farmer: "I never tried this remedy, but I know one thing he is off on."

Merchant: "What is that?"

Farmer: "Why, he says them 'ere corn weevils is produced by eggs which are laid by the old weevils. That's not so, and I know it. Them 'ere weevils come from the vital force in the grain and grow after the corn has been put in bins, in the same way as seeds sprout in the Spring."

Merchant: "What makes you think that?"

Farmer: "Why, I know it's the vital force in the grain that grows the weevils, because you never see the weevils in rotten kernels."

It would be hard work to pound sense into a stone, and the merchant, realizing this, proceeded to tell the farmer that we lived on a small organism known as a bacterium, but when we were sick the bacterium lived on us. Surely "where ignorance is bliss 'tis folly to be wise."

HOWARD EVARTS WEED, Agricultural College, Miss.

NEWSPAPER ENTOMOLOGY.—I do not like to see unreliable entomological statements designated in the NEWS as "newspaper entomology." If I were asked to state what I thought to be the greatest incentive to the popularity of entomological study during the present century I would unhesitatingly say the newspapers. By this I mean papers usually known and spoken of as newspapers, and more especially the agricultural press. The entomological question is here discussed mostly from an economic standpoint, yet interest in the science is pretty sure to be awakened, and study and research will not stop at the point of injurious and beneficial species. Purely scientific works and periodicals treating the subject are accessible but to the few, and are not to be found in the homes of the masses, while the homes without newspapers are few and far between. As to the reliability of scientific articles diffused through this medium, why are they not to be depended upon as much as are other matters from the same source? If the paper is reliable, its statements can nearly always be depended upon. Most of our eminent entomologists have at some period of their career addressed the public through the medium of the newspapers, and I venture to say have had larger and more appreciative "audiences" than when the fruits of their researches were disseminated by means of the strictly scientific periodicals or books. To the science of entomology much of my spare time has been given, and, in an humble way, I do not hesitate to declare that, aside from personal research, by far the greatest incentive to additional study has been "newspaper entomology," not of the *Electricia tomfooleryensis* kind, but such as is printed in the entomological columns of the *Prairie Farmer* and other agricultural papers, and which have at one time or other included the writings of many of the highest authorities in our beautiful science.

In conclusion, I would most earnestly beg our editor to refrain from labeling preposterous statements as "newspaper entomology," as thereby doubts are cast upon the veracity of such standard authorities as the *Prairie Farmer* and other reliable newspapers to which due credit is given even in text-books of entomology (see "Packard's Guide to the study of Insects"). We all know that mistakes are apt to occur in newspapers as well as elsewhere, and will not deny that gross exaggeration is often practiced by unprincipled journalists, but these are the exceptions and not the rule. Long live ENTOMOLOGICAL NEWS and "newspaper entomology!"

ALDA M. SHARP, Gladbrook, Iowa.

An article labeled "newspaper entomology" simply shows its source, and is not intended as a reproach.—ED.

Mr. SYDNEY SMITH could not appreciate an entomological paradise when he characterized insects as the curse of the tropics. "The *bete rouge* lays the foundation of a tremendous ulcer. In a moment you are covered with ticks, *chigoes* bury themselves in your flesh and hatch a large colony of young *chigoes* in a few hours. They will not live together, but every *chigoe* sets up a separate ulcer, and has his own private portion of pus. Flies get entry into your mouth, into your eyes, into your nose. You eat flies, drink flies, and breathe flies. Lizards, cockroaches and snakes get into the bed, ants eat up the books, scorpions sting you on the foot. Everything bites, stings, or bruises; every second of your existence you are wounded by some species of animal life that nobody has seen before, except Swammerdam and Merian. An insect with eleven legs is swarming in your tea-cup, a nondescript with nine wings is struggling in the small beer, or caterpillar with several dozen eyes in his belly is hastening over the bread and butter. All nature is alive, and seems to be gathering all her entomological hosts to eat you up as you are standing, out of your coat, waistcoat and breeches. Such are the tropics. All this reconciles us to our dews, fogs, vapors and drizzles, to our apothecaries rushing about with gargles and tinctures, to our old British constitutional coughs, sore throats, and swollen faces."

A SUGGESTION TO LEPIDOPTERISTS.—In connection with the article by Prof. Smith, in the NEWS for March, on the Lepidoptera, it has occurred to me that some ideas which presented themselves while studying that order might be useful or suggestive to others, particularly to those constructing keys or tables for popular use. While using such keys (and it is true of many descriptions also) I have often had my patience severely taxed by the propensity of the writer to put the cart before the horse; in other words, to ignore the proper sequence of words and phrases. Not only that, but some keys contain many needless repetitions of the same phrase or set of phrases, often ingeniously arranged by the author (for variety, I presume, I hope not with malicious intention) in all the combinations possible, adding immensely to the amount of time consumed in their use without any beneficial results. Uniformity is sometimes much to be desired. It is desirable here. There is enough to be done in our science without needlessly wasting any time. As a remedy for the first evil I would propose two or three rules for guidance in writing descriptions, and for the second the use of abbreviations. The rules are brief and easily borne in mind. The abbreviations are few and suggestive. I am well aware that the use of rules and abbreviations when many and complicated is unwise; but if few, simple, suggestive and labor-saving, it has many advantages. A letter or figure appeals to the mind more quickly and surely than a word. Take for instance:

A broad, submarginal band of buff on the lower surface of hind wings.

Proper sequence:

Under surface of hind wings with submarginal band of buff broad.

Now let

A = above = upper surface of wings,
B = below = lower surface of wings,
1 = front wing, and 2 = hind wing,

And we have:

B 2 with submarginal band of buff broad.

The rules I would suggest are:

Proceed from the general to the particular; and (usually) from the more obvious to the less so. Locate a peculiarity before describing it.

These are not to be considered inflexible, and should be applied to phrases which present a single idea to the mind rather than to single words. I would invariably, however, refer to the surface first, the wing second, and the details last, for reasons too obvious to need mention. The abbreviations I would recommend are as follows:

A (above) = upper surface of wings.
B (below) = lower surface of wings.
1 = primary = front wing.
2 = secondary = hind wings.
c = cell.
v = vein.

Thus B 1, c 6, refers at once to cell six on the under surface of the front wings.

These abbreviations are, of course, chiefly of value in reference to the Lepidoptera, especially the butterflies. Perhaps the plan can be adapted to other orders, at least it seems likely to be applicable to some of them. The other suggestions apply to all.—A. P. MORSE, Wellesley, Mass.

AILANTHUS FOLIAGE AND THE ROSE-BEETLE.—In Bulletin No. 32 of the New Jersey Experiment Station, discussing the rose-chafer (*Macrodactylus subspinosus*) Prof. Smith states that some other things "decoctions of peach leaves and the blossoms of Ailanthus were found to be valueless in destroying the beetle." This is the only reference I have been able to find to this tree, in this connection, until recently. While attending a farmer's institute at Martinsville, Ind., my attention was called to the fact that during last Summer the rose-chafer was very troublesome in that vicinity, defoliating whole vineyards, as well as doing much damage to roses and other cultivated plants. There seemed to be no remedy for the pests, but later on they were found to be feeding in countless numbers on the foliage of an *Ailanthus glandulosus* tree which stood in the court-house yard, and it was also discovered that in a very short time the beetles commenced falling to the ground dead; and, as the janitor of the court-house expressed it to me, "the ground under the tree was literally covered with dead insects, and they did not recover again either." I was shown the tree, which was certainly *Ailanthus glandulosus*. May it not be possible that the foliage of this tree, if not the blossoms, possesses poisonous properties which may render it an effectual remedy for this insect?—Prof. J. TROOP, Indiana Experiment Station.

Cossid or *Hepialid?*—I have found in northern New York what appears to be a *Cossid* or *Hepialid* larva boring the trunks of black ash growing in swamps. They work in young and vigorous trees; the pupal shells, seen protruding near the ground, indicate a size nearly that of *P. robiniæ*. Does any reader of this note know what species has this habit?—D. S. K.

TRANSACTIONS of the American Entomological Society, vol. xix (1892). —Pages 41–88 inclusive, have been printed since our last issue, containing the conclusion of Dr. Horn's "Random Studies of North American Coleoptera;" also "The North American species of *Ceropales*," by W. J. Fox; "A Revision of N. American species of *Phlepsius* (with a plate)," by E. P. Van Duzee; "The Mouth Parts of *Copris carolina*, with notes on the homologies of the mandibles (with two plates)," by John B. Smith; and the beginning of "Notes on North American Tachinidæ, Paper III," by C. H. Tyler Townsend.

Entomological Literature.

BIOLOGIA CENTRALI-AMERICANA. Part xcviii, December, 1891.—Coleoptera: vol. iv, pt. 2, pp. 361–368, pl. xvi, G. C. Champion; pt. 3, D. Sharp, pl. vi; vol. vi, pt. 1, pp. 281–312, M. Jacoby. Lepidoptera-Heterocera: vol. ii, pls. xlii, xliii, H. Druce. Diptera: vol. iii, pp. 1–56, S. W. Williston. Part xcix, February, 1892.—Arachnida-Araneidea, O. P. Cambridge, pl. xi. Coleoptera: vol. iv, pt. 2, pp. 369–392, G. C. Champion; vol. vi, pt. 1, supplement, M. Jacoby, pl. xlii. Diptera: vol. iii, pp. 57-72, S. W. Williston, pl. 1.

TRANSACTIONS OF THE YORKSHIRE NATURALISTS' UNION. Part 16. Leeds, November, 1891.—List of the Coleoptera of Yorkshire (cont.), pp. 49–64, Rev. W. C. Hey.

BIBLIOTHECA ZOOLOGICA (Cassel), viii, 3, 1891.—Researches on mimicry as a basis of a natural system of Papilionidæ, Dr. E. Haase.

ZOOLOGISCHER ANZEIGER (Leipzig), Feb. 29, 1892.—On the development-history of the parasitic Hymenoptera, N. Kulagin; of the Pedipalpi, Dr. A. Strubell. March 14, 1892.—On the development of the Lung-Books in *Scorpio fulvipes*, M. Laurie, figs. Preliminary communication on a new German species of *Chordeuma*, C. Verhoeff. Supplementary remarks to my communication on sense organs in the palpi and first pair of legs of Solpugidæ, Dr. P. Bertkau.

ANNALS AND MAGAZINE OF NATURAL HISTORY, ix, 51, March, 1892.—On some spiders from the Andaman Islands, collected by E. W. Oates, Esq.,* Prof. T. Thorell.

COMPTE RENDU. SOCIETE DE BIOLOGIE (Paris), March 4, 1892.—The "intermediary body" of Flemming in the seminal cellules of *Scolopendra* and *Lithobius*, M. Prenant. March 18, 1892.—The "central corpuscle" of E. von Beneden in the seminal cells of *Scolopendra*, A. Prenant.

REVUE LINNEENNE, viii, 86, Lyons, Feb. 15, 1892.—Description of a new *Saturnia* from China, L. Sonthonnax. Study on the genus *Stenopterus* Steph., M. Pic. Habits and metamorphoses of *Aphodius granarius* L., Capt. Xambeu.

MONOGRAPH OF THE BRITISH CICADÆ OR TETTIGIDÆ, by G. B. Buckton. London, Macmillan & Co. Eighth and last part, December, 1891.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxv, Brussels, 1891.—Hymenoptera collected on the Lower Congo by the expedition under the auspices of the king of Belgium,* A. Schletterer. Catalogue of the Curculionidæ belonging to the genus *Zygops*,* J. D. des Loges.—Compt. Rendu. Feb. 6, 1892. Myrmecological notes,* A. Forel. Heterocera exotica, new species from the Dutch East Indies,* F. J. M. Heylaerts. Note on the African Chrysodemidæ referred to the genus *Iridotænia*,*† C. Kerremans. Diagnoses of two Buprestids from the region of Lake Tanganyika,* id. New Coleoptera from the Congo,* A. Duvivier. Clavicorni from Bengal, A. Grouvelle. Note on the ants of Belgium, A. Lameere. The Brachymera of Belgium and the neighboring regions, E. Coucke. Third note on some Coleoptera Heteromera of Belgium, L. Coucke. Enumeration of the Hemiptera of Belgium (concl.), E. Coubeaux.

ENTOMOLOGISCHE NACHRICHTEN (Berlin), xviii, 4, February, 1892.—An excursion in the vicinity of Nagasaki, Dr. A. Seitz. Further researches on the process of completion of coloration, C. Verhoeff. The Zoocecidæ of Lorraine (cont.), J. Kieffer.—No. 5, March. On some new and rare Fossoria,* C. Verhoeff.

THE BRITISH NATURALIST (London), March, 1892.—The Pterophorina of Britain (cont.), J. W. Tutt. British spiders (cont.), Rev. F. O. P. Cambridge. Notes.—April, 1892. Portrait and sketch of Miss E. A. Ormerod.

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* Contains new species other than North American. † Contains new genera.

The Diptera of Dorsetshire, C. W. Dale. Heterocera of the Island of Man, H. S. Clarke. Lepidoptera of Aberdeenshire and Kincardineshire, W. Reid.

TRANSACTIONS OF THE AMERICAN ENTOMOLOGICAL SOCIETY, xix, signatures 4-7, Phila., March, 1892.—A study of *Amara* s. g. *Celia* (cont.), G. H. Horn, M.D. Random studies in North American Coleoptera, id. The North American species of *Ceropales*, with a catalogue of the described species of the world, W. J. Fox.

MITTHEILUNGEN AUS DEM NATURHISTORISCHEN MUSEUM IN HAMBURG, ix, 1, 1891.—Spiders from Madagascar and Nossibe,* Dr. H. Lenz, 2 pls. The Termita, Odonata and Neuroptera collected by Dr. F. Stuhlmann in East Africa,* Dr. A. Gerstaecker. The Collembola of South Georgia [Antarctic] from the collections of the German station of 1882-1883,* Dr. C. Schaeffer, 1 pl.

NATURWISSENSCHAFTLICHE WOCHENSCHRIFT (Berlin), March 20, 1892. —On the voracity of *Liparis monacha* L., R. Rittmeyer.

GEOLOGISKA FOERENINGENS I STOCKHOLM FOERHANDLINGAR, Bd. 14, 2, 1892.—On an Hemiptera from the Lower Graptolitic Slates of Sweden,*† J. C. Moberg.

LE NATURALISTE (Paris), March 15, 1892.—Habits and metamorphoses of *Xyloperta pustulata* Capt. Xambeu. Two new Sphingidæ from Eastern Asia,* L. Austant. Carnivorous caterpillars, F. Plateau, figs.

PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1892, pp. 133-135.—Report on the Hymenoptera collected in West Greenland, W. J. Fox.

REVUE DES SCIENCES NATURELLES DE L'OUEST. II, 1, Paris, January, 1892.—General considerations on the classification of the Acarina, followed by an attempt at a new classification, Dr. Trouessart. Extends to families and subfamilies.

ARCHIVES DE ZOOLOGIE EXPERIMENTALE ET GENERALE (2), x, 1, Paris, 1892.—Notes on the life and habits of insects : Observations on *Ammophila affinis* Kirby, Dr. P. Marchal.

ANALES DE LÁ SOCIEDAD CIENTIFICA ARGENTINA (Buenos Aires), xxxii, 6, 1891; xxxiii, 1, 1892.—New Hemiptera of the Argentine and Uruguayan faunas,*† Dr. C. Berg; *Glyphepomis*, *Parentheca* n. gen. Argentine Dipterology (Syrphidæ), F. L. Arribalzaga.

CANADIAN ENTOMOLOGIST, London, Ont., April, 1892.—Notes on North American Tachinidæ, with descriptions of new genera and species, v, C. H. T. Townsend. Clerck's Icones, W. J. Holland. Hermaphrodite Gypsy Moths, C. H. Fernald. A classification of the North American Spiders, N. Banks. Canadian Hymenoptera, 1, W. H. Harrington. Our Winter beetles, H. F. Wickham. *Chionobas Uhleri*, T. D. A. Cockerell. How to take the oil or grease out of specimens of natural history, P. Fisher.

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* Contains new species other than North American. † Contains new genera.

TWENTY-SECOND ANNUAL REPORT OF THE ENTOMOLOGICAL SOCIETY OF ONTARIO, Toronto, 1892.—Noteworthy injuries caused by insects during the past season, C. J. S. Bethune. A microscopical examination of an unexpanded wing of *Callosamia promethea*, J. A. Moffat. Notes on Japanese insects, W. H. Harrington. Numerous articles on Economic Entomology by various authors.

NEW MEXICO COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS, Bulletin No. 5, Las Cruces, N. Mex., March, 1892.—Notices of importance concerning fruit insects, C. H. T. Townsend.

ENTOMOLOGISTS' RECORD, London, March 15, 1892.—Effects of temperature on the coloring of Lepidoptera, F. Merrifield. Classification by neuration, J. W. Tutt. The genus *Hepialus*, J. E. Robson. Numerous notes on variations in British insects.

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, IRIS, Dresden, iv, 2, Berlin, February, 1892.—A new form of *Morpho*,* Dr. O. Staudinger. The development of the butterfly after leaving the pupal envelope, W. Peterson. New African Lycænidæ,*† Dr. O. Staudinger. New species and varieties of Lepidoptera of the palaearctic faunal region,*† id., 2 pls.

SUPPLEMENTARY APPENDIX to Travels among the Great Andes of the Equator, by Edward Whymper. London, John Murray, 1891.—This volume is made up of a series of papers by a number of specialists, and based on some of the zoological and mineralogical collections made by Mr. Whymper among the Ecuadorian Andes, for the most part at elevations above 8500 feet. The greater part of the book is entomological, the groups treated being Coleoptera*† by (the late) H. W. Bates, D. Sharp, Rev. H. S. Gorham, A. S. Olliff and M. Jacoby; Formicidæ*† by P. Cameron; Lepidoptera* by F. Du C. Godman and O. Salvin; and Rhynchota*† by W. L. Distant. The general entomological results as bearing on questions of Geographical Distribution are discussed in an introduction by Mr. Bates. Numerous excellent wood-cuts, engraved by Mr. Whymper himself, illustrate the text.

PUBLICATIONS DE L'INSTITUTE ROYAL GRAND-DUCAL DE LUXEMBOURG, xxi, Luxembourg, 1891.—Materials for the entomological fauna of the province of Belgian Luxembourg: Coleoptera, third century, A. P. de Borre.

KNOWLEDGE (London), April, 1892.—The life of an Ant, E. A. Butler.

ENTOMOLOGIST'S MONTHLY MAGAZINE (London), April, 1892.—Annotated list of British Tachiniidæ, R. H. Meade. Notes on collecting Tortrices (the Pole system), C. Fenn. On some new species of Histeridæ and one new genus,* G. Lewis. Notes on some British and exotic Coccidæ, J. W. Douglas. On an Indian Ant-mimicking Hemipteron,* E. Bergroth. Note on *Pentaria badia* Rosenh. (= *sericaria* Muls.) with description of a second species from the East Pyrenees,* G. C. Champion.

*** Contains new species other than North American. † Contains new genera.**

ENTOMOLOGIST (London), April, 1892.—Portrait and sketch of Henry Walter Bates. Hellebore as an insecticide, W. W. Smith. "Assembling" in Lepidoptera, H. D. Sykes. Notes on Lepidoptera taken in 1891, Rev. O. Pickard-Cambridge. Notes on British Lepidoptera, *Melanippe*, R. South. Notes on the synonymy of Noctuid Moths, A. G. Butler. Descriptions of some new species of Phytophagous Coleoptera and synonymic notes,* M. Jacoby.

SOCIETE LINNEENNE DU NORD DE LA FRANCE (Amiens), No. 232, October, 1891.—Contributions to the local fauna (Arachnida), M. Du Roselle.

ZOOLOGICAL RECORD for 1890.—Published by the Zoological Society, London, 1892. Insecta by D. Sharp. Arachnida and Myriapoda by R. I. Pocock.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

COLEOPTERA.

Nine n. sp. *Rhipidophorus*, *Nemognatha*, *Zonitis*, Mex., Centr. Am., Champion, Biol. Centr. Amer., Coleop. iv, pp. 361–368. Phytophaga, n. genera and species, Jacoby, id., vi, suppl., pp. 281–312.

Zygops (*Apatorhynchus*) *leopardinus* des Loges, Ann. Soc. Ent. Belg. xxxv, p. 40, Mex.

Amara femoralis Horn, Trans. Am. Ent. Soc. xix, p. 30. *A. robustula*, p. 32, Calif. *A. nupera*, p. 33, Col., N. Mex. *A. imitatrix*, p. 34, Calif., Wash., Vancouver. *Trechus barbaræ*, p. 41, Calif. *Platynus myrmecodes*, *arizonensis*, *languidus*, p. 42, Ariz. *Pinodytes Hamiltoni*, p. 45, Pa. *P. pusio*, p. 45, Cal. *Dendrophilus californicus*, p. 46, Cal. *Aulacoscelis purpurea*, p. 46, Ariz. *Notoxus Schwarzi*, p. 47, Utah.

DIPTERA.

Syrphidæ: n. gen., sp. and synopses of genera, Williston, Biol. Centr.-Amer. Diptera, III, pp. 1–72.

One new genus (*Clistomorpha*) and ten new species of Tachinidæ, U. S., Townsend, Can. Ent. xxiv, pp. 77–82.

Hæmatobia alcis, Snow, 22d Rep. Ent. Soc. Ont., p. 96, Minn.

HYMENOPTERA.

Cercopales Stretchii, Fox, Trans. Am. Ent. Soc. xix, p. 52, Cal.

Nematus borealis Marlatt, Proc. Acad. Phila. 1892, p. 133, Disco Is.

Ichneumon discœnsis Fox, Proc. Acad. Phila 1892, p. 134, Disco Is.

Notopygus americana Harrington, Can. Ent. xxiv, p. 98, *Prionopoda canadensis* p. 98, *Ischyrocnemis ottawaensis* p. 98, *Pimpla ellopiæ* p. 99, Can.

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* Contains new species other than North American.

Doings of Societies.

A Regular Stated Meeting of the Entomological Section of the Academy of Natural Sciences was held March 24th at the hall S. W. cor. Nineteenth and Race Streets, Dr. Horn, director, presiding. Meeting called to order at 8.20 p. m. Members present: Laurent, Ridings, Blake and Skinner. Associates: Calvert, Fox and Nell. A letter was read from Prof. C. H. Fernald, in which he stated that he had finished studying the Pyralidæ belonging to the American Entomological Society, and had returned them correctly named. Prof. Fernald says: "It is a valuable collection, and I have put a great deal of work on it so as to have everything accurately named, and have written and put a label on each individual specimen, so that no confusion nor doubt can arise about any specimen. The collection contains about 1200 examples, and I added a large number of species from my own collection which were not represented in the collection, and have followed the order and names in the new catalogue. Where I felt certain an insect was a *type* I have so marked it, but Grote and Robinson did not mark their types, so that there may be types in the collection which I have not marked as such. The fact is, a part of the types went to the New York Museum, and I fear may have been destroyed, but I have no means of knowing what ones. I carefully compared these in your collection with the original description, and, where I felt quite sure, marked them; anyway, I believe all their species are represented by authentically named specimens, whether types or otherwise." Mr. Calvert presented the fourth lot of European Odonata. Mr. Laurent exhibited a large number of specimens of Coleoptera which he had collected by sieving earth. Dr. Horn exhibited the type material used in writing his paper on Eumolpini. This is the first time the group has been treated in its entirety. They are a difficult lot for study, of more recent geological time, being feeders on plants of the present period. Nineteen genera were considered. Mr. Calvert stated that five years had elapsed since his election as an associate of the Section, and it was appropriate that he should make a statement of the growth and present status of the Society's collection (Odonata) and his own. The Entomological Society's collection contains, at present, identified specimens of Odonata representing in all 77 genera and 189 species. This total is made up of 62 genera and 147 species from America, 21 genera and 37 species from Europe, 3 genera and 3 species from New Zealand, 4 genera and 6 species from Japan (13 genera and 4 species being repeated in this subdivision). According to present calculations, there are in America North of Mexico 58 genera and 245 species. Of these 54 genera and 136 species are represented in the Society's collection; of the remaining four genera, two are represented by European species and one in his own collection, leaving but one genus, *Oxyagrion*, represented in N. America by but one species, *O. rufulum*, from northern California, but even this locality is considered to be very doubtful by the best authority. In the Society's collection and his own collection together, there are represented 57 genera and 164 species of the Odonat fauna of America North of Mexico, that is, sixty-seven per cent. of all the species. The Odonata of the European faunal district (*i. e.*, geographical Europe, N. Africa, Asia Minor) includes 36 genera and 103 species. Of these the Society's collection has 21 genera and 37 species. My own collection includes 31 genera and 77 species, that is seventy-five per cent. of the species. Of the other five genera, two are represented by species from other parts of the world leaving three unrepresented. The Society's collection does not include any species from the European fauna not represented in his own collection. Mr. Chas. Liebeck and Mr. C. W. Johnson, were duly elected members of the Section. Henry Skinner, *Recorder.*

Entomological News for April, was mailed March 31, 1892.

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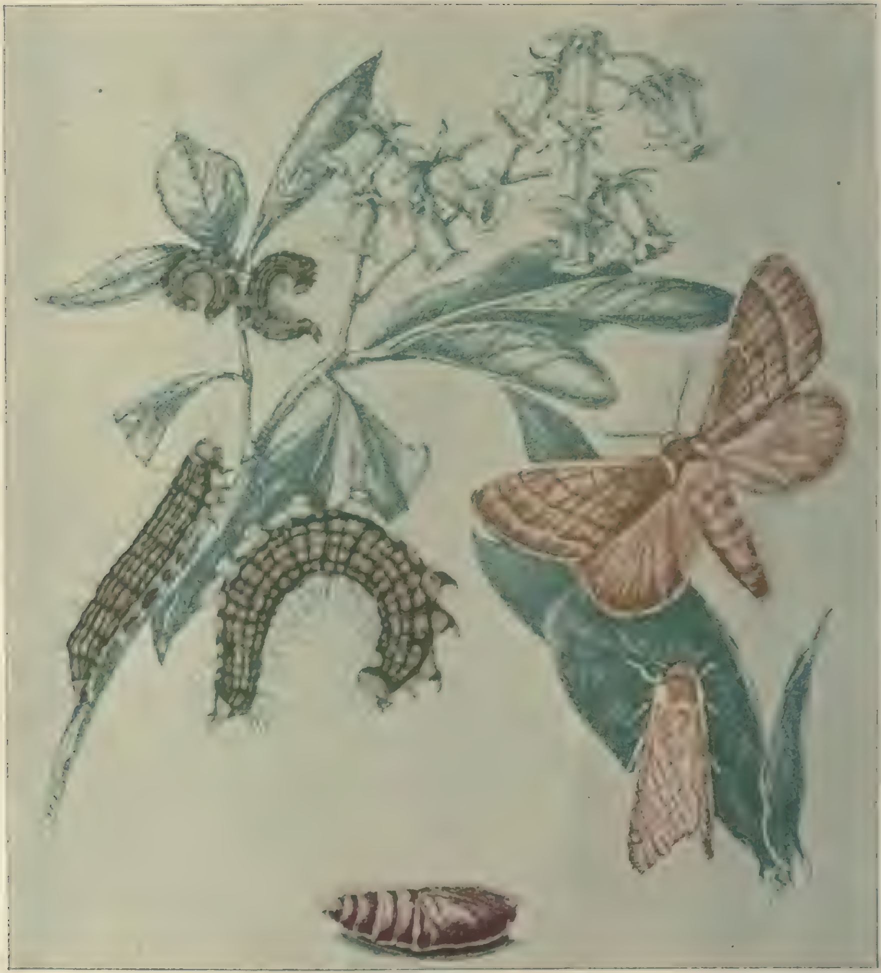

DATANA MINISTRA.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. JUNE, 1892. No. 6.

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OUR illustration this month represents part of the life-history of *Datana ministra*. The plate was made from a photograph of a drawing found among the unpublished plates of the late T. R. Peale, of Philadelphia.

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NEW NORTH AMERICAN TACHINIDÆ.

By C. H. TYLER TOWNSEND, Las Cruces, N. Mex.

(Continued from page 81, Vol. III, No. 4)

Loewia globosa n. sp. ♂.—Eyes cinnamon-brown, thickly short hairy, edges touching in front of ocelli; frontal vitta light brown, vertex blackish; anterior pair of ocellar bristles stronger than frontal bristles, directed strongly forward, decussate; sides of front, face and cheeks silvery-white; the præ-genal area very large, brownish, encroaching on sides of face and extending narrowly to bases of antennæ; sides of face with fringe of bristles; antennæ and arista brownish, second antennal joint orange rufous, third joint one and one-half times as long as second, more or less rufous on sides; proboscis about two-thirds hight of head, slim, brownish, labella developed; palpi curved, thickened apically, brown, bristly; occiput blackish, black-hairy. Thorax and scutellum black, with a faint purplish shade, scutellum with an apical decussate and a lateral pair of macrochætæ. Abdomen shining greenish black, in some lights dark metallic-green; second segment with a median marginal pair and a weak lateral pair of macrochætæ; third with a stronger lateral pair and a median marginal pair; anal with a submarginal row of six. Legs black, claws and pulvilli rather elongate, pulvilli whitish. Wings grayish hyaline, basal portion and wing veins yellowish; tegulæ soft brownish yellow, halteres tawny. Length of body 4.5 mm.; of wing 4 mm.

Described from one specimen: So. Florida (Robertson). This genus differs from *Ennyomma* Twns. in the closed apical cell, which terminates just before tip of wing.

ATROPHOPALPUS n. gen.

Considerably resembling *Ceratomyiella*, but differs in the character of the palpi. Belongs in Phytoinæ. Head more or less triangular in profile. Front rather prominent, narrow in ♂, about one-fifth width of head, widened before, face widening at same angle; frontal bristles in a single row, descending on sides of face to lower border of eyes; vertical and next two pairs directed backward, rest forward and inward, the descending ones downward; no orbital bristles (♂). Face receding, epistoma somewhat prominent; facial depression two-thirds width of face, not deep; facial ridges bare, except a bristle or two next vibrissæ, latter inserted at constriction of ridges about on oral margin, rather stout, decussate; sides of face narrow, bare except for the fringe of descending frontal bristles; cheeks nearly one-third eye-hight, hairy. Eyes very thinly hairy, almost bare. Antennæ as long as face, second joint not elongate, third about five times as long as second, narrow; arista thickened on basal third, microscopically pubescent, apparently only 2-jointed, basal joint short. Proboscis somewhat elongate, about as long as hight of head, not very stout, labella present; palpi very small, short filiform, terminating in a long bristle. Thorax about as wide as head; scutellum with an apical decussate, and two lateral pairs of macrochætæ. Abdomen narrower than thorax, elongate cylindro-conical, first segment not shortened; macrochætæ only marginal; hypopygium more or less exserted. Legs rather long and slender, not very bristly; claws and pulvilli of ♂ rather elongate, front ones apparently longest. Wings a little longer than abdomen, with costal spine, third vein bristly half way to small cross-vein; apical cell closed in border at tip of wing, fourth vein bent at wide angle, without stump or wrinkle, apical cross-vein very slightly concave; hind cross-vein nearly straight, rather oblique, nearer to bend of fourth vein. Type, *A. angusticornis* n. sp.

Atrophopalpus angusticornis n. sp. ♂.—Eyes light brownish; frontal vitta dark brown, narrow; sides of front, face and cheeks silvery-white, except brownish præ-genal area; antennæ grayish black, second joint more or less rufous apically, arista blackish; proboscis dark brown, palpi apparently grayish; occiput cinereous, silvery on edges, gray-hairy. Thorax silvery, with four black vittæ, scutellum silvery, clouded with blackish. Abdomen shining black, segments two to four narrowly silvery white at base, all segments very faintly silvery, anal segment light rufous; first segment with a lateral macrochæta surrounded with bristles, second with a lateral one and a median marginal pair, third with a marginal row of about six, anal with marginal row of eight. Legs black, front and middle femora faintly silvery below, pulvilli fuscous. Wings grayish hyaline, tegulæ translucent white; halteres pale brownish at base, knobs luteous. Length of body 4⅔ mm.; of wing 3⅔ mm.

Described from one specimen; So. Florida (Robertson).

Myothyria vanderwulpi n. sp. ♂ (?).—Eyes light brownish; frontal vitta blackish, narrow, one-third width of front; front hardly one-third width of head, equilateral, face widened; two orbital bristles; sides of front, face and cheeks dark cinereous, slightly silvery; antennæ and arista black, third antennal joint about two and one-half times as long as second; proboscis brownish, fleshy, not as long as hight of head; palpi brownish, testaceous at tip; occiput blackish, thinly black-hairy. Thorax black, cinereous pollinose, scutellum black. Abdomen black, bases of second to fourth segments silvery-white; first two segments with a lateral pair of macrochætæ, the second with a median marginal pair; third with a marginal row; anal with several lateral submarginal, and a median discal pair. Legs black, claws and pulvilli very short. Wings grayish hyaline, with costal spine, tegulæ nearly white, halteres blackish, tawny at base. Length of body 3⅔ mm.; of wing 3½ mm.

Described from one specimen; So. Florida (Robertson).

ENTOMOLOGIZING IN MEXICO.

By W. S. Blatchley, Terre Haute, Ind.

(Continued from page 114, Vol. III, No. 4)

Other interesting and typical tropical forms were the *Heliconias* with their brilliant colors and long and narrow wings. As many as a dozen of them were often seen fluttering about a clump of flowers, and four or five would at times be captured with a single scoop of the net. The *Neonymphas* were also well represented, two or three species being found everywhere flying close to the ground with that queer jerky flight so characteristic of the members of that genus. Among the Nymphalidæ, however, the species of *Argynnis*, *Melitæa* and *Limenitis*, were the most common, and some of them exceedingly brilliant in color. The genus *Eudamus* was especially well represented among the Hesperidæ, *E. proteus* Linn. being most noticeable on account of its numbers, the long tails of its hind wings, and the surprising swiftness of its flight.

At Fortin, a station nine miles below Orizaba, the difference in level being 700 feet, a number of species were taken which were not found at the higher altitude. Among them was a long-beaked *Libythea*, a genus which is represented in all the eastern United States by but a single species, and a large and beautiful *Caligo*, which, at that height, was very rare, but two specimens having been seen. At a still lower level, however, it is said to be one of the commonest of species.

To the average Mexican a collector of "chinches" or "bugs," was a somewhat novel sight, and many were the curious eyes which followed my every movement. At night, especially when I set out to seek what I might find about the electric lights, I was sure to be followed by a motly crowd of all ages, sizes, sexes and conditions. They would watch me capture a specimen or two with the net and then each one would rush after the largest and finest moth to be seen and endeavor to catch it with his hands. The moths were usually taken from the sides or walls of houses near the lights. The houses were mostly of stone, plastered and whitewashed on the outside, and jut right onto the street with no yard intervening. The light, reflecting from the walls, would attract the insects and often fifty or more of them were to be seen on the sides of a single building. I usually captured the smaller moths by inverting over them a wide mouthed cyanide bottle into which they would flutter quickly, and in less than half a minute would be dead. The larger ones were captured with the net and chloroformed. Of course every specimen caught with the hands was ruined, and when the natives went after them or brought me fluttering specimens with half the scales knocked off their wings, I would shake my head and inform them as best I could that when thus captured the insects were sure to be "rote," *i.e.* broken, and therefore worthless. Then the older persons would cease trying to catch them, but it was hard work to keep the boys back when a large or showy specimen settled near them.

Oftentimes they would attract my attention to a large moth which I had not noticed by clapping me on the shoulder and pointing to it, at the same time uttering in a whisper, as if afraid the insect would hear, the words "*Esta une grande*, *esta une grande*, *esta*, *esta*, *esta*, *esta*," which were: "There is a large one; there is a large one, there, there, there." If a small one they would say "*esta chica*, *esta chica*," and if a very small one, "*esta chicita*, *esta*, *esta*, *esta*."

The houses have the windows very low and protected by gratings which extend out six or eight inches from the wall. The boys often aided me by climbing upon these gratings and reaching with the net a large specimen which had settled close up under the projecting eaves.

On one occasion, about twelve o'clock at night, a drunken fellow with two or three companions came along, and grabbing the handle of the net, he insisted on climbing the window grating of the most palatial residence of the town for a large brown moth which was high upon the wall. I remonstrated with him as best I could, but no policeman being near he insisted on his point, and I finally had to yield. Up he clambered, making noise enough to be heard half a square away, and I fully expected to see him shot by one of the occupants of the dwellings. However, he finally got within reaching distance of the moth, and after several ineffectual attempts, during which he came near falling, succeeded in getting it into the net, and brought it down in triumph to me. I thanked him graciously, and, getting hold of the net, quickly left the scene, although half a dozen desirable specimens were in view.

About 1200 moths, representing 160 species, were taken during my stay at Orizaba, but as yet little has been done towards mounting or classifying them, and hence nothing is known as to the number of rare forms taken. Among the larger ones were numerous species of Sphingidæ, some of which were exceedingly abundant. Of these the largest species taken was *Sphinx leucophreata ?*, which expands seven inches. A number of its larvæ were taken from the trunk of a shrub which is extensively used for hedges. When discovered they were stretched out side by side on the trunk of the shrub, and were as close together as they could lie.

Four hundred Coleoptera, representing one hundred and twenty-five species, were taken in the vicinity of Orizaba. As mentioned above, no attempt was made to take a full series of them, but only those as happened in the way were picked up. Of those taken by far the larger numbers were Chrysomelidæ, a family which is extensively represented there, almost every kind of plant having some species which feeds upon it. A *Doryphora*, very similar to *decimlineata* Say, but smaller and darker, was found feeding upon a cultivated species of *Solammi*, showing that that genus of plants is the favorite food of these beetles. Of the Carabidæ, the family most largely represented in Indiana, but half a dozen species were collected, although a person looking for them especially, could undoubtedly have found many more. The largest and most striking beetles taken were the *Dynastes* and *Xylorycles* already mentioned, of which the latter were very common about the lights at night, though more were seen during the day; and the gigantic long-armed beetle *Acrocinus longimanus*, three specimens of which were also taken about the lights. A single male of the handsome and peculiar Scarabæid *Inca clathratus*, was also secured.

Of the Orthoptera, forty species of Acrididæ or locusts, were taken, the giant of this number being *Rhomalia auricornis* Walk., which was not found above Fortin, but was quite frequent at Cordoba. Unlike most of our species it is not found on the ground, but on tall weeds and bushes, upon whose leaves both adults and larvæ feed. Like all the larger locusts it is very clumsy in its movements being easily captured with the fingers. Locustidæ, or "Katydids," were common, especially about the lights, and some of them were of enormous size. The Blattidæ, or cockroaches, are represented in the collection by six or seven species, the most abundant ones seen being the well-known Croton bug and the Oriental cockroach (*Periplaneta orientalis* L.), both of which are cosmopolitan. The "earwigs," formerly classed under this order, but now placed by themselves under the order Dermaptera, are with us very rare insects, but in Orizaba they literally swarmed on the sides of the houses, and three or four species of them were secured.

Sixty species of Hemiptera, or "bugs" proper, were taken as opportunity offered. Leaf and tree hoppers were to be seen by thousands, and varied much in size and color. *Pachycornis torridus* Scop. and *Stiretrux anchorago* Fab., which are among the most brilliant of the Heteroptera, and so variable in color, that each has been described under at least half a dozen names were taken in small numbers, while that pest of the market gardener, *Murgantia histrionica* Hahn. was present everywhere. *Belostoma americanum* Leidy, the "electric light bug," is becoming as well known in Orizaba since the advent of the lights as its congener, *Benacus griseus* Say, which bears the same common name, is known to the inhabitants of our northern cities. Nor can we forbear mentioning, while speaking of Hemiptera, those species of *Acanthia* which were felt on various occasions, but were difficult to capture.

If a Mexican discovers that an American or "Gringo," desires to secure any special article or group of articles the price of those articles suddenly advances one thousand per cent. "Bugs," which were quoted away below par before our advent into the city of Orizaba took an upward impetus in value each day of our stay, and every street urchin and many men began to deal in them, or rather to try and deal in them. One day the landlord informed me that a native was in the office who had "an exceedingly rare butterfly" which he wished to dispose of. I went down and found that he had a small gray moth with a silvery band across its wings. I looked at it and asked him "*quanto?*" (how much?) "*Un peso*," (one dollar) was the answer. I did not care to purchase, but offered him a "*medio*," six cents. He walked out with a look of disgust, carrying the precious insect with him, and that night I captured five of them from the side of our building. Another native had a large click beetle with enormous mandibles, which he asked me two dollars for. I finally offered him fifty cents, but he evidently thought I would give more before I left the city and refused the offer, although he did not appear as if he had seen fifty cents in as many months.

After eleven days spent in collecting in the vicinity of Orizaba we left that fair city with many regrets and made our way to the town of San Andres, 4000 feet higher up the slope. The difference in the numbers and variety of insects which this ascent of 4000 feet made was remarkable. During two day's collecting about San Andres not more than half a dozen species of butterflies and as many of beetles were taken, while the other orders were as sparingly represented. As the ascent continued this number became gradually less. At a camp at 12,000 feet a half day's search was rewarded with four species of beetles which were captured from beneath the bark of logs; one small brown butterfly, a *Chionobus ?*, whose range was between 9500 and 13,000 feet, and one species of locust, a *Pezotettix*, which was there quite abundant, and a single specimen of which was afterward taken near the 14,000 feet level.

At the latter point, which was near the lower limit of snow and as high as I ascended two species of rough-backed beetles belonging to the genus *Phellopsis ?* ; one species of Phalangidæ, or harvestmen; the *Pezotettix* mentioned above, and three species of small-sized myriopods were found during several hour's search, the beetles and myriopods being quite common beneath the bark of logs and beneath rocks. A few half-grown specimens of a *Centhophilus*, a genus of wingless Locustidæ, were also secured. These were evidently the bulk of the species of insects found at that altitude at that season of the year, though Dr. Scoville saw at the top of the mountain, 18,000 feet, two specimens of a small white butterfly, but was unable to capture either of them.

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On the Species of ONCOCNEMIS in Colorado.

By David Bruce.

As the Noctuid genus *Oncocnemis* Lederer is not very abundantly represented in the majority of our collections, perhaps a few observations on the species I have taken in Colorado may be acceptable.

1. *O. Hayesii* Grt.—Not very rare at light and over flowers at night in central Colorado, August and September. I took two examples in July this year in western Colorado flying round flowers by day.

2. *O. Dayi* Grt.—Abundant, flying over flowers by day in South Park at 10,000 feet elevation; it has all the habits of *Plusia Snowi* and *P. Hochenwarthi*, and can scarcely be distinguished from these species until captured. I have seen it no place but at the locality named, August and September.

3. *O. fasciatus* Smith.—One beautiful example flying over flowers by day August 20th, southwest Colorado.

4. *O. tenuifascia* Smith.—Common just at timber line in South Park, flying with *Dayi* over flowers in bright sunshine; looks extremely like a *Botis* when flying, August and September.

5. *O. terminalis* Smith.—Not uncommon at Boulder and vicinity; sitting on rocks by day, and have taken several at light at Denver, August.

6. *O. levis* Grt.—Common in August at Golden City and Denver; can be found in plenty by day by examining crevices and under projections near electric lights.

7. *O. tricolor* Smith.—This beautiful species is sometimes abundant at Denver; I have picked off more than a dozen examples from a building near an electric light in one morning, August and September.

8. *O. homogena* Grt.—I met with this species in some numbers near Aspen, flying over flowers in the sunshine; have also taken a few examples at light in Denver, August.

9. *O. Glennyi* Grt.—Occurs in the greatest profusion during September and October at light in Denver City. Walls and fences near electric lights are spotted with thousands in the early morning, the moths flying off or hiding in crevices as the sunshine gets on them. This species is a positive nuisance every fall; the store windows and hallways of hotels are covered with them.

10. *O. occata* Grt.—Occasionally at sugar in Platte Cañon. I met with a few fine examples this Summer near Cañon City, flying by day over flowers, August.

11. *O. Chandleri* Grt.—Occasionally at light in the western part of the State; this year I found it common in July by beating old cedars; they were hiding under the ragged bark.

12. *O. major* Grt.—Several on buildings and in crevices of sidewalks near electric lights at Salida, July. I have also taken it flying by day.

13. *O. cibalis.*—Not common; have taken one or two every Summer near the foothills in the eastern part of the State; they start up from the herbage like *Crambodes talidiformis.*

14. *O. colorado* Smith.—Not uncommon at light in central and western Colorado in July and August.

15. *O. atricollaris* Harr.—Occasionally at light in various parts of the State, August.

16. *O. umbrifascia* Smith.—Two examples only, last July, at light in southwestern Colorado.

I have also two or three species taken this Summer, the names of which I have not yet learned; they are probably undescribed.

Notes on the LARRADÆ, by William H. Patton.

By WILLIAM J. FOX.

In the April number of ENTOMOLOGICAL NEWS, under the title "Notes on the Larradæ," Mr. Patton has made several assertions which, if not corrected, would ultimately cause much confusion, as they are entirely in error. In correcting these statements I wish to state that I do it in the best of good-will and friendliness to Mr. Patton, to whom I had written some time ago, pointing out the errors.

Liris Fab.—I am not acquainted with this genus, but according to Kohl, who must certainly be acquainted with it, the outer edge of the mandibles are without a notch; both sexes have the mandibles bidentate within, not only those of the ♀. In the original description, or in any other of this genus, no mention whatever is made of the tarsi, yet Mr. Patton states that it is "founded on a male type with peculiar tarsi."

Liris coxalis Patt. is synonymous with *Tachytes aurulenta* Fab.

Tachysphex Kohl.—This genus is characterized and distinguished from *Tachytes*, to which it is allied, by the more slender form and more feeble hairing; the anterior femora of the ♂ are notched near the base beneath; the fore tarsi ♀ having very long, flexible spines, and the pygidium being naked. It is certainly not represented in this country by *Larra analis* Fab. as an examination of that species will show.

Lyroda subita Say certainly does not belong to *Didineis*, which belongs to the Nyssonidæ. The hind femora are toothed near the apex in *Didineis*, which is not the case in *Lyroda subita*.

I am not acquainted with *Pisonitus* and *Sylaon*, so again refer to Kohl. *Pisonitus* Shuck. is a synonym of *Pison* Spin. *Sylaon* Picc. and *Bothynostethus* Kohl. differ from *Pison* in having the marginal cell appendiculate, and a pygidial area on the last dorsal segment ♀. *Bothynostethus* differs from *Sylaon* by having a notch on outer margin of mandibles.

"*Larra divisa* Pttn. is ♀ of *L. æthiops* Cress." How can this be? The type of *æthiops* is a ♀, and is distinct from *divisa* in having the pygidial area differently shaped.

COLLECTING IN THE FAR NORTH.

I.—THE ALASKAN COAST.

By H. F. Wickham, Iowa City, Iowa.

By request of the Editor of Ent. News I place before the reader some account of a Summer trip to Alaska and that part of British Columbia lying back of it drained by the Stikine (or Stikeen) River. Although some parts of the territory are quite easy of access, the distance from all centres of trade and ordinary routes of travel have combined with the general ideas as to climate and the unattractiveness of the insect fauna, to keep entomologists from visiting them—consequently comparatively little has been done to increase our knowledge in this direction since the time of the Russian explorations. The following notes are intended simply to convey an idea as to the general character of the places visited from an entomological standpoint, but by the kindness of Dr. Horn, in giving his aid in identifying beetles, the correctness of what is placed on record relating to the Coleoptera is secured. A complete list of these insects is in preparation, and will be presented at as early a date as practicable, so that any indefiniteness of specification in this paper will be remedied.

Leaving Tacoma about the middle of June, a run of four days brought me to the first stopping-place in Alaska—the Yes Bay cannery—and as the steamer was to remain a few hours unloading freight, I went ashore to get some insects if possible. The rugged surface of the land with its heavy growth of conifers and thickets of blueberry intermixed with a vile plant known as the "devil's club" (*Fatsia horrida*) is not conducive to either ease or comfort while collecting, and the excessive dampness forms still another drawback. The ground is covered everywhere with a luxuriant carpet of moss, often many inches deep, into which the feet sink at every step. But little was found here, only a half dozen *Pterostichus castaneus*, a few Staphylinidæ, twenty or thirty little moths, a fly or two and a couple of Hymenoptera. The moths were flying around the flowers of the devil's club," and before I had taken all the whistle of the steamer called me back. Shortly after we touched at the Loring cannery, where I took nothing but one or two Scolytidæ flying around newly-cut timber.

Early the next morning we were running along the shore of Wrangel Island, which lies close to the mainland of Alaska, the upper end being directly opposite the mouth of the Stikine River. On the seaward side, only a very few miles from the river mouth, the town of Fort Wrangel lies on a narrow strip of beach, backed by high hills covered with the usual conifers and blueberry undergrowth; close to the beach this growth is replaced by thickets of salmon-berry and thimble-berry, the fruit of both being used as food by the native and white residents, but supporting little in the way of insect life. The great nettles, taller than a man, which are plentiful in these thickets, make the task of forcing a way through them or searching the ground anything but pleasant. However, I expected to make this place my base of operations for some weeks, and so made preparations accordingly.

Investigation showed the insect fauna of the island to be by no means varied, and to present nothing remarkable as compared with other points in the North Pacific. A number of Carabidæ may be taken, mostly along the edge of the beach, just above high-tide mark; among them may be mentioned *Cychrus angusticollis*, *C. marginatus*, *Loricera* 10-*punctata*, *Nebria* sp., *Pterostichus crenicollis*, *P. vitreus*, *P. riparius*, *Bembidium funereum*, *B. flavopictum*, *B. cautum*, *Patrobus septentrionis*, *P. aterrimus*, *Platynus erasus* and *Amara littoralis*. Of the Dytiscidæ only an *Agabus* and a few specimens of *Hydroporus oblitus* were found, and these not in water, but under stones or pieces of wood in very wet places—the use of a net in pools and streams yielding nothing. Search under seaweed and other débris cast up by the sea proved much less productive than I had anticipated, very little except a few Staphylinidæ being taken here. *Trichopteryx parallela* and a species of *Ptenidium* were found sparingly under logs and chips, while *Cryptohypnus musculus* occurred in some numbers under the shingle.

Just within and along the outskirts of the brush, *Athous ferruginosus* is seen quite commonly, flying where footsteps disturb the quiet of the spot. On rolling over sticks or small logs here, which were deeply imbedded in moss and much overgrown with grass, these insects would fly around in numbers, alighting on my clothes and very easily captured—they often came from resting places near or upon the ground, running up the stems of plants until a good place was reached from which to take wing, when they would let go and fly slowly around the spot, something after the manner in which *Myodites* may be seen about golden-rods in the States during Autumn. Occasionally *Podabrus piniphilus* may be found in the same localities as the *Athous*, but not in such large numbers. Far back in the woods but little can be found, except *Pterostichus castaneus*, and this only in small numbers, the growth of moss being so rank as to greatly obstruct search, and by it any logs that may chance to lie on the ground are soon bound down so lightly as to defy efforts to move them. *Aphodius aleutus* occurred once or twice in the first, also an *Eros* of a species not yet determined.

Experience proved it more profitable to set traps for certain kinds of beetles rather than to go after them in their almost inaccessible haunts. With an eye, therefore, to the capture of such species as live in carrion, I piled up a great heap of carcasses of birds in a little thicket a few feet from my cabin-door, every day looking them over carefully and sifting the soil on which they lay, that nothing might escape. The results were far above what I had hoped, numerous species of Staphylinidæ being thus obtained in large numbers, also many *Cercyon fulvipennis*, some *C. adumbratum*, *Choleva egena*, *Ptilium columbianum*, and occasionally other Trichopterygidæ. Taking into account the seeming dearth of Coleopterous life on the island, the number of specimens taken in this way was really surprising.

Little in the way of wood- or leaf-eating beetles was seen on the island, though careful search was made for them. A couple of specimens of *Opsimus quadrilineatus* were found, one of them under the wharf at Wrangel, the other resting on a fence, and a single dead *Phymatodes* was taken on a window. Not a single Chrysomelid was secured, and beating trees yielded only two specimens of a *Magdalis*. Two Hylobiini were taken from low sprouts. But little can be said of the insect fauna of the place as regards the other orders. Hymenoptera were scarce, Lepidoptera by no means common, and Diptera numerous only in individuals. A large species of Dragon-fly was the chief representative of the Neuroptera, while of Orthoptera there seemed to be a total lack. The few Hymenoptera that were taken were mostly Humble-bees, captured around the blossoms of white clover.

Having spent several days on the island I determined to make a trip to the mainland, and engaged, for the purpose, a white trapper and an Alaskan Indian, intending to send them after mammals while I employed my own time collecting insects. We left Fort Wrangel early one morning, and about half past four next afternoon reached our destination—about twenty-five miles from Fort Wrangel—which was to be my stopping place for two days. Next morning I sent my men across the bay with instructions to ascend the snow-capped mountains opposite, in search of the mountain goat, and to bring back any insects that they might come across. Then, as it was raining and all vegetation was soaked, I could do little but turn over a few logs along the beach and search under seaweed for Staphylinidæ. I was rewarded by finding a *Liparocephalus*, but took little else, and filled out the day by skinning birds shot on the way down.

The night passed without interruption, except that caused by the cries of a captive baby seal which we had placed in a pen back of the camp—cries of the most homesick intonation, calculated to melt the heart even of an entomologist without babies of his own. Morning dawned clear at last and promised a good day for collecting, so I lost no time in getting out and to work, with better success in some directions than on the island. By beating I took a few *Syneta simplex*, *Corymbites caricinus*, *C. tarsalis* and *Anaspis rufa*. A number of *Anthobiums* were found and one or two examples each of *Leptalia macilenta* and *Pachyta monticola*, but this was about all of the beetles, the remainder of the catch consisting of flies, moths and a few Hymenoptera. Midges and mosquitoes were an almost intolerable nuisance, and it was quite a relief to get back to the cabin, build a ''smudge'' and look over the day's catch. In the evening my men came back without the goat, though they had shot one away up towards the summit of the mountain and found the difficulties in bringing down the skin and necessary parts of the skeleton so great that the attempt was abandoned. However, they brought down a *Donacia*, which they had found in a snow-bank at a considerable altitude, an *Eros* and a *Rhyncholus*, all of interest from the locality in which they were taken. Both men were so weary that they said they were too tired to pick up any of the ''bugs'' they came across on the way down. Our return trip took us only a single day, and next day I was on hand to resume my entomological labors at Fort Wrangel.

Leaving the Stikine River country for discussion in another paper, but two points remain to be spoken of—Hunter's Bay on Prince of Wales Island (if we may rely on the information as to locality given by officers of the steamer), and Metlakahtla or Port Chester, a large Indian settlement under direction of a missionary. At Hunter's Bay a few hours were spent with fair success, the same general character of country obtaining as in other places spoken of though some of the species of beetles were not found elsewhere. *Pterostichus castaneus*, *P. amethystinus*, *Epuræa truncatella*, a fine Byrrhide, *Pedilophorus acuminatus*, a Scydmænid of considerable size, and a number of *Xyloterus bivittatus* were seen. At Metlakahtla the rain again interfered, but a few other species were added to my list, among them *Pterostichus validus* and *Megapenthes stigmosus*. All of the narrow coast strip as well as the islands which constitute southern Alaska consists of rocky and rugged hills with very little variety of soil or vegetation, so that an entomologist would hardly expect to find a great variety of species. Every spot seems, however, to yield something not found at others, and doubtless much that is new yet remains to be discovered. The difficulties of exploration have rendered anything more than a superficial examination out of the question, except in isolated localities, and the day is yet far distant when we shall be able to say that our knowledge of the Alaskan insect fauna approaches completeness.

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Notes on the COCCINELLIDÆ observed in San Diego Co., Cal.

By F. E. Blaisdell, M.D.

Anisosticta seriata Melsh.—Plentiful in September. Occurring along the bay-shore in favorable localities. Large numbers are on the wing during warm sunny days; when at rest, clustered in the tops of small shrubs and in the ice-plant (*Mesembryanthemum crystallinum*).

Megilla maculata DeG.—Rare. Occurs in the eastern portion of the country, along the Colorado River.

Megilla vittigera Mann.—Quite plentiful in Summer on sedges along water courses.

Hippodamia ambigua Lec.—Common everywhere.

Hippodamia convergens.—Guér.—Abundant. Interbreeds with the preceding species; both congregating during the colder months of the year under bark on trees, and in the dead leaves heaped about the bases of clumps of sycamores, where they can often be observed in immense numbers.

Hippodamia parenthesis Say.—Very rare. Occurs on squash vines at Poway. Identical with eastern examples in my collection.

Coccinella 9-notata Hbst.—Plentiful. Confined to the coast region; not observed in the interior—at least, fourteen years' collecting has failed to discover it at Poway (fourteen miles from coast, elevation 700 feet) and higher altitudes.

Coccinella californica Mann.—Very common. This species, besides being aphidivorous, feeds upon the buds of the wild sunflower (*Helianthus californica*). Interbreeds with the preceding species.

Coccinella sanguinea Linn.—Plentiful throughout the county.

Coccinella abdominalis Say.—Not common. Frequents citrus groves, loco-weed (*Astragalus leucopsis*), and pig-weeds (*Chenopodium*).

Psyllobora tædata Lec.—Plentiful on plants along water courses and in vineyards. Have observed them feeding upon a small aphis infesting the under surface of the grape leaf, where the beetle was also noticed in all stages of development.

Chilocorus cacti Linn.—Quite abundant in certain localities upon *Agave americana*, *Astragalus leucopsis*, and citrus and olive trees infested with the Black Scale.

Exochomus pilatei Muls.—Rare. Occasionally taken with the preceding species on *Astragalus leucopsis.*

Exochomus marginipennis Lec.—Moderately common on different flowering shrubs, especially *Prunus demissus.*

*Scymnus lophanthæ** Blais.—Vortriede's Ladybird is not widely distributed, occurring mostly on the Coronadian peninsula. In color, the elytra are a shining black, with a feeble purpurescent lustre, and not *strongly metallic* as stated in my descrption in Ent. News, March number p. 51. Post-coxal arcs distinct in outline, semi-circular; outer margin feebly concave, terminating at apex of metathoracic episternum.

Scymnus marginicollis Mann.—Plentiful everywhere.

Several undetermined species of *Brachyacantha*, *Hyperaspis* and *Scymnus.*

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* We are informed by the Agricultural Department at Washington that this is one of the introduced Australian species, the name of which has not yet been ascertained.—Ed.

A new species of CRIORHINIA and Notes on Synonymy.

By Dr. S. W. Williston, Lawrence, Kan.

Criorhinia coquilletti n. sp. ♂.—Front separated by nearly the width of the ocelli; ocellar prominence shining black; front below and the face covered with dense, light yellow pubescence and pollen, and, on the sides of the face above, with long, light yellow pile; cheeks broadly shining black. Antennæ brownish red, first joint but little longer than the second, third joint much broader than long, produced somewhat acutely above to the base of the arista. Proboscis moderately elongate. Thorax deep, shining black; on the dorsum, metallic; the color, however, is largely concealed beneath dense, long pile, which is yellow in front of the wings, both on dorsum and on the pleuræ, and black behind the wings. Abdomen deep black, shining, somewhat metallic, on the fourth segment markedly so; pile long, moderately dense, on the first three segments black, [slightly intermixed on the third], on the fourth segment yellow. Legs deep reddish brown or reddish black; the knees, the narrow base of the tibiæ, and the basal joints of the four anterior tarsi yellowish; pile black. Wings brown on the anterior and distal parts; subhyaline behind. Length 9—10 mm.

Hab.—Southern California. The specimen upon which the foregoing description is based, was sent me by my friend, Mr. D. W. Coquillett, who had recognized it as belonging to a new species. The species is closely allied to *C. lupina* Will., but differs in having the first antennal joint less elongated, in having the third joint more acute above, a shorter proboscis, and in the absence of the facial stripes, etc. I have seen but very few species in this family since the publication of my "Synopsis." Several of these, of not a little interest, will be shortly described by Mr. W. A. Snow. Since my studies of the North American forms, however, I have had the opportunity of studying nearly three hundred species from Central America, the West Indies and South America. The nomenclature of a few North American species is affected by the results of these studies, as follows:

Melanostoma stegnum Say, Journ. Acad. Phil. vi, p. 163; Compl. Wr. ii, p. 358 [*Syrphus*]; Williston, Biol. Centr.-Amer. Diptera, iii, p. 10.=*Melanostoma tigrina* Osten Sacken, Western Dipt. p. 323; Williston, Synopsis, etc., p. 47, pl. iii, fig. 8.

Melanostoma mellinum Linné, etc. I identify *M. pruinosum* Bigot as a closely allied, but distinct species.

Baccha clavata Fabricius, Ent. Syst. iv, p. 298 [*Syrphus*]; Syst. Antl. p. 298; Wiedemann, Auss. Zweifl. Ins. ii, p. 94; Schiner, Reise d. Novara, Diptera, p. 341; Williston, Trans. Amer. Ent. Soc. xv, p. 270; Biol. Cent.-Amer. Diptera, iii, p. 33.=*Baccha babista* Walker, List, etc., iii, p. 549; Williston, Synopsis, p. 117, pl. iv, fig 9.=*Baccha facialis* Thomson, Eugen. Resa, Ins. p. 504.=*Spazigaster bacchoides* Bigot, Ann. Soc. Ent. Fr. 1883, p. 326.

Ocyptamus trigonus Wiedemann, Auss. Zweifl. Ins. ii, p. 125 [*Syrphus*]; Schiner, Reise d. Novara, Diptera, p. 346; Williston, Trans. Amer. Ent. Soc. xv, p. 265; Biol. Centr.-Amer. iii, p. 30.=*Baccha torva* Williston. Synopsis, etc., p. 124. Males which seem to be of this species have the wings hyaline.

Volucella pallens Wiedemann, Auss. Zweifl. Ins. ii, p. 204; Williston, Trans. Amer. Ent. Soc. xv, p. 275; Biol. Centr.-Amer. Diptera, iii, p. 53, =*Volucelia sexpunctata* Loew, Wien. Ent. Monatschr. v, p. 38; Centur. vi, 37; Williston, Synopsis, etc., p. 141, pl. vi, fig. 2.

Eristalis vinetorum Fabricius, etc. *Eristalis thoracica* Jaennicke is not a synonym of this species, but of *E. obsoletus* Wiedemann.

Eristalis albifrons Wiedemann, Auss. Zweifl. Ins. ii, p. 189; Roeder, Stett. Ent. Zeit. 1885, p. 341; Williston, Trans. Amer. Ent. Soc. xv, p. 283; Biol. Centr.-Amer. iii, p. 62.= *Eristalis albiceps* Macquart, Dipt. Exot. ii, p. 56; Williston, Synopsis N. Amer. Syrphidæ, p. 172.=*Eristalis seniculus* Loew, Centur. vi, p. 63.

Eristalis scutellaris Fabricius, Syst. Antl. p. 190 [*Milesia*]; Wiedemann, Auss. Zweifl. Ins. ii, p. 159; Macquart, Dipt. Exot. ii, 2, p. 41; Schiner, Novara Exped. p. 364; Williston, Trans. Amer. Ent. Soc. xv, p. 279; Biol. Centr.-Amer. iii, p. 63.=*Palpada scutellata* Macquart, Hist. Nat. Dipt. i, p. 513; Dipt. Exot. ii, 2, p. 38 [*Eristalis*].=*Eristalis fascithorax* Macquart, Dipt. Exot. 4 Suppl. p. 139.=*Doliosyrphus scutellatus* Bigot, Ann. Soc. Ent. Fr. 1883, p. 222.=*Doliosyrphus rileyi* Williston, Synopsis, p. 178, pl. viii, fig. 8. A wider acquaintance with allied species makes me disinclined to accept the genus *Doliosyrphus* Bigot.

Tropidia albistylum Macquart, is a distinct species, a specimen of which is in the National Museum.

Xylota elongata Williston, Synopsis, p. 234, is a synonym of *X. angustiventris* Loew.

———o———

NEW JAMAICA TACHINIDÆ.—I.

By C. H. Tyler Townsend.

The following species was transmitted to me by Mr. Cockerell, Curator of the Museum, with the record that it was taken at Cinchona, Jamaica, a place which is high up in the mountains.

Pseudohystricia exilis n. sp. ♀.—Eyes brown, with some bronzy reflections, pubescent; front averaging one-third width of head, frontal vitta blackish, velvety, hardly one-fifth width of front; five posterior pairs of frontal bristles directed backward, two orbital bristles; front, face and cheeks of a clear golden-yellow, shading to brassy or cinereous in spots on front, pile on sides of face and cheeks golden-yellow; antennæ brownish, first two joints dark, base and posterior half of third rose-rufous, third joint one and a half times as long as second; arista blackish, first two joints elongate and of equal length; proboscis black, palpi elongate, widened and enlarged toward tip, rufous-yellow, occiput brassy, thickly clothed with brassy pile. Thorax black, thinly silvery, with four narrow vittæ, the outer ones heavier and interrupted at suture; humeri and pleuræ black, very faintly silvery; scutellum deep brownish rufous, very spiny. Abdomen deep brownish rufous, with purplish reflections, densely beset everywhere, except on sides anteriorly, with spiny macrochætæ; venter with macrochætæ on median portion and on sides posteriorly. Legs black, front femora somewhat silvery on outside, tibiæ spiny, especially middle and hind pairs, claws and pulvilli a little elongate, pulvilli tawny yellowish; front tarsi not dilated. Wings brownish fuscous, veins blackish at base; tegulæ fuscous, halteres rufous. Length of body 11 mm.; of wing 9.5 mm.

Described from one specimen; Cinchona, Jamaica. Collected by Mr. W. Fawcett, Head of the Botanical Department of Jamaica.

Our ATYPIDÆ and THERAPHOSIDÆ.

By Nathan Banks, Washington, D. C.

These two families of spiders contain what are commonly called tarantulas, the Mygalidæ of older authors. They have four lung-sacs, the fang of the mandibles moves vertically, the legs are short and stout. The two families may be tabulated thus:

Maxillæ broadened at base, palpi lateral . . . . . . **Atypidæ.**
Maxillæ not broadened at base, palpi terminal, or almost so. **Theraphosidæ.**

Of Atypidæ we have but one genus, *Atypus;* two species of which have been described from the Western States. *A. bicolor* Lucas may, if any one is fortunate enough to obtain a specimen, form another genus on account of the arrangement of the eyes. It is probably the species to which Hentz refers as the "*A. rufipes* found by Mr. Milbert." *A. bicolor* Lucas is black, with red legs; only known from "Philadelphia." *A. niger* Hentz is wholly black; from Mass., Md., D. C., Va., N. C.

The Theraphosidæ may be divided into two subfamilies:

Inner distal angle of maxillæ slightly prolonged, palpi somewhat lateral. **Eriodontinæ.**
Inner distal angle of maxillæ not prolonged, palpi terminal. **Theraphosinæ.**

The Eriodontinæ are represented by three genera:

A. S. E. the largest eyes . . . . 2.
A. M. E. the largest eyes . . . . **Anthrodiætus.**
2.—S. E. farther apart than M. E. . . . . . **Myrmekiaphila.**
  S. E. not farther apart than M. E. . . . . . . **Nidivalvata.**

In *Anthrodiætus* the S. E. are widely separated, the anterior row is longer than the posterior row and recurved. One species, *A. unicolor* Hentz is described from Alabama. *Myrmekiaphila* has the S. E. widely separated, but the anterior row is not longer than the posterior row, and is slightly procurved. One species, *M. foliata* Atk. is described from North Carolina. *Nidivalvata* has the S. E. close together or touching, anterior row procurved, a little shorter than the posterior row. Two species are described, both from North Carolina, by Prof. Atkinson:

S. E. and P. M. E. touching, in one group . . . . . **N. marxii.**
S. E. and P. M. E. distinctly separated . . . . . **N. angustata.**

The Theraphosinæ may be divided into two tribes:

Three claws to tarsi . . . . **Trionchi.**
Two claws to tarsi . . . . **Dionchi.**

The Dionchi have one genus, *Eurypelma*, in Western States, of which five species are described. These are the genuine tarantulas. As the species are extremely close, a key will not be given, but the species arranged in two series according to locality. California: *E. californica* Auss., *E. rileyii* Marx, *E. leiogaster* Auss. Southern W. S.: *E. hentzii* Girard, La., Tex., Kans.; *E. steindacherii* Auss., N. Mex. *E. hentzii* is the most common; *E. mordax* Auss. is the same as *E. hentzii* Girard.

The Trionchi are divided into two groups:

Median groove longitudinal . . . . . . **Mecicobothri.**
Median groove transverse . . . . **Aepicephali.**

Group MECICOBOTHRI.

Spinnerets four . . . . **Brachybothrium.**
Spinnerets six . . . . 2.
2.—Eyes about equal in size, third article of spinnerets but little longer than second . . . . **Atypoides.**
  A. M. E. much smaller than others, third article of spinnerets much longer than second . . . . **Hexura.**

Brachybothrium is represented by two species, one *B. pacificum* Simon from Wash. State, the other *B. accentuatum* Simon from

North Carolina. *Hexura* and *Atypoides* have each one species: *H. picea* Simon from Wash. State; *A. riversi* Cambr. from Cala.

Group AEPICEPHALI.

Tibia III flattened at base	**Pachylomerus.**
Tibia III not flattened at base	2.
2.—Lip much longer than broad at base	5.
Lip at most as long as broad at base	3.
3.—Abdomen truncated behind	**Cyclocosmia.**
Abdomen rounded behind	4.
4.—Mandibles pointed in front	**Cteniza.**
Mandibles rounded in front	**Bolostromus.**
5.—Eyes crowded together in two curved parallel rows	**Madognatha.**
Eyes more separated, in two rows not parallel	**Chlosterochilus.**

Cyclocosmia truncata Hentz from Alabama. *Cteniza californica* Cambr. from California. *Bolostromus fluviatilis* Hentz from Alabama. *Maclognatha abbottii* Lucas from Georgia and "Philadelphia." *Chlosterochilus gracilis* Hentz from Alabama. *Chlosterochilus pertyii* Lucas, Ann. Ent. Soc. Fr., Second Series, Vol. III, 1845, p. 60; not Vol. VI, p. 377, as given by Marx in the Catalogue. This was described as *Actinopus* by Lucas, but the eyes do not differ in arrangement from *Ch. gracilis;* the A. S. E. are, however, much larger than the A. M. E., while in *Ch. gracilis* the A. S. E. are about equal to the A. M. E. It was described from "Amerique du Nord." Dr. Marx, in his Catalogue, also places *Pachyoscelis rufipes* and *Theragretes walkenaerii* (the male of *Sphodros abbottii* according to Walckenaer) as in our fauna. This is not the case, as may be seen from the following quotation from Lucas in his article on the subject: . . . "car l'espece que M. Walckenaer regarde comme le male du *S. abbottii* ♀ se trouve dans le meme localité que mon *Pachyloscelis rufipes*, l'un et l'sutre ont eté trouves au Brésil dans les Campos geraes."

Of *Pachylomerus* we have two species. There seems to be considerable trouble in the genus. Prof. George Atkinson described three species as new, and redescribed *P. carolinensis* Hentz, and suggested that *P. solstitialis* Hentz was the male of the same species. It is very probable that *P. carolinensis* and *P. solstitialis* are the same, though there may be a slight difference in the proportionate width of the cephalothorax. But as *P. solstitialis* comes before *P. carolinensis* in the descriptions, and as it is a male, I think there is no doubt but what the species should be called *P. solstitialis* Hentz. Moreover, the species identified, described and figured by Prof. Atkinson as *P. carolinensis* does not agree with Hentz's figure of that species. But *P. turris* Atk. does agree with Hentz's figure of the eyes. Therefore I consider *P. turris* = *P. carolinensis* = *P. solstitialis*. I see no characters of specific value between Prof. Atkinson's *P. carabivorus*, *P. carolinensis* and *P. quadrispinosus*. The variation of width in the cephalothorax is so slight as to be of no value; the arrangement of spines and teeth on claws are not of specific importance. The males are not known. There is no great difference in the eyes. I thus write the species under one name, *P. carabivorus* Atk., at least until the males show differences in the palpal structure. The two species may be separated thus:

P. S. E. as near to A. S. E. as to P. M. E. . . . . **P. solstitialis.**
P. S. E. nearer to P. M. E. than to A. S. E. . . . . **P. carabivorus.**

P. audouinii Lucas, 1837, described from "Amerique du Nord;" if from W. S. may be one of the above species. Lucas placed it in *Actinopus;* Ausserer says it is a *Pachylomerus;* why, I do not know.

A NEW DALMANNIA FROM CALIFORNIA.

By D. W. Coquillett, Los Angeles, California.

Up to the present time only two species of the Conopid genus *Dalmannia* have been reported from America north of Mexico. To these I now add a third, and present a table for identifying these three species :

1. Scutellum and humeri marked with bright yellow . . . . 2.
   Scutellum and humeri wholly black . . . . . **vitiosa** n. sp.
2. The yellow on hind margins of abdominal segments three and four prolonged forward each side, nearly crossing the segments; cheeks of male yellow . . . . **picta** Will.
   The yellow not prolonged forward each side; cheeks of male with a large black spot . . . . **nigriceps** Lw.

Dalmannia vitiosa n. sp. ♂.—Front yellowish brown, darkest on the upper half, where the dark color forms two indistinct stripes; antennæ black, apex of style yellowish; face and cheeks yellow, the former with two brown median stripes; occiput black. Thorax, pleura, breast and scutellum wholly black. Abdomen black, hind margin of the second, third and fourth segments yellow; segments three, four and five each with a median yellow stripe and a broader one each side; venter yellow, a basal triangle and sides before the apex, black. Legs yellow, apices ot middle and hind femora, upper side of front femora, tibiæ, except at the apex of each, and whole of tarsi, brownish. Wings grayish hyaline; halteres brown, the knob yellow. Length 4 mm.

Los Angeles County, California. A single specimen.

The second basal and discal cells are united in each wing, but whether this is a permanent character, or simply a defect of this individual specimen, I am unable to say. In all other structural characters it agrees perfectly with *Dalmannia picta* Williston, originally described from Arizonia, but which I have collected in various parts of southern California.

NOVEL SMUGGLING.—The account of the smuggler recently arrested by the Customs authorities in this city, who had a quantity of diamonds under a porous plaster on his back, reminds me of an even more novel device that came to my knowledge some years ago. A Philadelphia physician was attacked by that most seductive craze, the collector's mania for beetles and bugs. After this had been going on for some years and the result had become one of the finest collections of Coleoptera anywhere extant, he began to find that the mad desire for very rare specimens to fill up the occasional gaps in his otherwise perfect series of creeping things was too great a drain on his exchequer. To be sure he was a bachelor, under light expenses, and already blessed with a fair inheritance. Then, too, he had built up a considerable practice in that branch of medicine which he described as "leading man at baby matinees." Still, rare bugs come high, and he could not afford the continually increasing drain. Just at this juncture some one seems to have hit upon a very novel expedient. Whether the fertile brain belonged to the doctor, or to a young friend, a scion of one of Philadelphia's oldest and proudest families, who was and is a member of a prominent house of jewelers, I never learned. However that may be, the interest of the story hinges on the fact that certain rare beetles came in from South Africa—the Kimberly diamond fields, in fact—nicely packed in raw cotton, and some of the largest of these were most unaccountably heavy. While the outer anatomy was of most interest to the doctor, who valued these rare specimens as such, the inner anatomy appeared to be of far greater interest to his friend. A careful investigation, I am told, resulted in demonstrating the fact that the added weight in these specimens was due to a certain undigested mineral substance that was found in the abdominal cavities of some of the largest specimens. Though these specimens were pronounced to be herbiferous, still when certain cutting and polishing processes were finished I heard that these mineral substances were found to be "of good color and the first water." Whether the method of thwarting the watchful Customs agents is still in use I cannot say.—*New York Town Topics*.

ENTOMOLOGICAL NEWS.

Published monthly (except July and August), by the Entomological Section of the Academy of Natural Sciences, of Philadelphia, with the endorsement of the American Entomological Society. It will contain not less than 240 pages per annum. It will maintain no free list whatever, but will leave no measure untried to make it a necessity to every student of insect life, so that its very moderate annual subscription may be considered well spent.

ANNUAL SUBSCRIPTION $1.00, IN ADVANCE.

☞ All remittances should be addressed to E. T. Cresson, Treasurer, P. O. Box 248, Philadelphia, Pa.; all other communications to the Editor of Entomological News, Academy of Natural Sciences, Logan Square, Philadelphia, Pa.

Philadelphia, Pa., June, 1892.

This number of the News contains thirty-six pages.

The copy for the Elementary article arrived too late for publication in this issue.

We desire to thankfully acknowledge, from a friend and patron of science who is interested in the progress of Entomology and who desires to aid Entomological News in the publication of useful information, the receipt of a generous contribution which will enable us to publish promptly much interesting material. To those who are endeavoring to make the News a permanent success, and who give freely of their time and talent to that end, such liberal assistance as is given by our kind friend is very helpful and encouraging.

Notice to authors of papers for the NEWS.—In the future papers for publication in the News will be limited to three pages for any one month, and those papers largely made up descriptions of species will be limited to two pages. All articles exceeding these limits, if worthy of publication, will be referred to the Publication Committee of the American Entomological Society for publication in its "Transactions."

We publish below an interesting extract from the "American Farmer," which has a direct bearing on Entomology, and shows the magnitude and importance of agricultural experimentation. We predict that in the future the interest in Entomology will be largely increased, and also the number of students of this branch of natural history, more especially as it is now being more fully recognized as a study of practical value.

The magnitude of the Agricultural Experiment Station work in the U. S.—Few persons realize the vast proportions to which agricultural experiment work has grown in this country. The chief part of the growth has been within the last five years, since the Hatch bill went into operation. By the terms of this law there are appropriated annually by the

General Government $15.000 to each State and Territory that shall accept the terms of the grant and establish and maintain an Agricultural Experiment Station. There is also established in Washington a central office, called the Office of Experiment Stations, in which the results of the station work in the various States are digested and tabulated, and which also has a consulting and advisory interest in the progress and execution of the work.

Under the act of Congress, approved March 2, 1887. known popularly as the Hatch bill, agricultural experiment stations are now in operation in all the States and Territories with the exception of Alaska, Montana and Idaho. In a few of the States more than one station has been established, so that in all 49 are now in operation. In Alabama, Connecticut, Massachusetts, New Jersey and New York, separate stations are maintained wholly or in part by State funds. The total grant of money made last year by Congress for the experimental work amounted to $728,000 for the Hatch bill stations and the office of experiment stations, and $50,000 for the sugar experiments. The amount expended in experimental work by the grass stations and entomological division is not accurately known, but reaches probably not less than $20,000, making the total expenditure by the Department of Agriculture for experimental work in round numbers $800,000. In regard to the particular amounts expended by the Department of Agriculture in direct co-operation with the experimental work in the several States, the following list will be found reliable: For entomological work—Nebraska, $600; Iowa, $600; Ohio, $1500; Michigan, $1000. For botanical work—Texas, $700; Arizona, $700; Colorado, $1000; Utah, $500; South Dakota, $500; Wyoming, $500; North Dakota, $500; New Mexico, $500; Louisiana, $750; Florida, $250; Georgia, $500; North Carolina, $500; Mississippi, $1600. In addition to this the State and private contributions to this work amount to fully $200,000, making in all the sum of $1,000,000 devoted annually to the cause of the experimental promotion of Agriculture. Five hundred persons are employed actively in this work. Among these are 71 directors, 120 chemists, 47 agriculturists, 50 horticulturists, 30 botanists, 36 entomologists, 22 veterinarians, 14 meteorologists (excluding all employed by the Weather Bureau), 4 biologists, etc. During the year 1891, excluding publications coming directly from the Department, the stations published 49 annual reports and 255 bulletins. The mailing list of the stations (exclusive of the Department lists) now contains 350,000 names. About 40,000,000 pages devoted to information on agricultural subjects were printed and distributed during the year, not counting the Department publications. This does not include the hundreds of newspapers which publish accounts of the work. It is safe to say that at least 10,000,000 of our reading people read more or less of this work every year. In addition to this add the number reached directly by the Department, and the vastness of the interests of this work, measured by the number of people directly benefitted, is at once apparent.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

Mr. E. V. BEALES, of Denver, Col., is doing a good work in trying to interest the boys and girls of his city in Entomology by means of popular articles in the *Denver Sun*. It is said that many nets are to be seen in Denver this Spring. This should stimulate others to try and make young entomologists in the same way.

Rev. C. J. S. BETHUNE, editor of the "Canadian Entomologist," spent the month of March in the Bermudas in order to get over an attack of grip. We are glad to say he has returned in good health.

BARON VON FELDER, of Vienna, has sold his famous collection of butterflies to Hon. Walter Rothschild, of London, for $25,000. The Baron, who is now seventy-eight years of age, believed that he was too old to care for his collection properly. It is said that Hon. Walter Rothschild intends to leave his collection, now the finest in the world, to the British Museum when he dies.—*Newspaper clipping*.

MISS PALMER'S "SILK WORMS."—Chambersburg, Pa., January 28th. Pretty Miss Aloysius Marguerite Palmer, formerly of this city, and whose parents still reside here, was yesterday convicted in the Federal Court at Topeka, Kan., of fraudulently obtaining $3000 from E. E. McClelland, of Topeka, claiming that she sold him silk worm eggs, though she really sold only mustard seeds. She is liable to imprisonment for from one to five years.—*Newspaper clipping*.

TRANSACTIONS of the American Entomological Society, vol. xix (1892). —Pages 89–128 inclusive, have been printed since our last issue, containing the continuation of C. H. T. Townsend's "Notes on North American Tachinidæ. Paper III."

DOES ACANTHIA PIPISTRELLI OCCUR IN NORTH AMERICA?—In ENT. NEWS, Vol. I, pp. 26–27, is a note by Mr. C. P. Gillette, stating that he has found numerous specimens of an *Acanthia* in the nests of Barn Swallows, and that Mr. Ashmead had determined the species as *A. pipistrelli* (not *papistrilla*, as the name is written in ENT. NEWS). As *A. pipistrelli* does exclusively live on Bats (*Vespertilio pipistrellus* and other species) and in their nests, the American specimens must certainly belong to *A. hirundinis*, which is not uncommon in the nests of Barn Swallows in North and Central Europe. *A. pipistrelli* is a rare species, which has been found in Central Europe and once in great abundance in Sweden in an old hollow tree inhabited by bats. It is, however, very possible that both *A. pipistrelli* and *A. columbaria*, which lives in dove-cots, also occur in N. America, although they have been overlooked. Descriptions and figures of these three species are published by Jenyns in Annals of "Natural History" 1839, pp. 241–244, and by Schenck in "Entom. Nachrichten" 1877, pp. 182–183.—Dr. E. BERGROTH, Tammerfors, Finland.

FOURTH ANNUAL MEETING OF THE ASSOCIATION OF ECONOMIC ENTOMOLOGISTS.—In accordance with an action of the Association, taken at the Washington meeting, the fourth annual meeting will be held at Rochester, N. Y., two days prior to the meeting of the American Association for the Advancement of Science. All members intending to present papers are requested to forward titles to the undersigned before August 1st, in order that the program may be prepared in proper season. The proceedings of our meetings are attracting the attention of working entomologists of other countries, and it is to be hoped that members will spare no efforts to make the coming meeting even better than those which have preceded it. Owing to the continued ill-health of President Lintner, and in order to relieve him of as much labor as possible, all correspondence, unless of a nature necessitating his attention, may be addressed to the Secretary, F. M. Webster, Columbus, Ohio.

I FIND from Dr. McKnight's paper in April NEWS concerning the Lepidoptera of the Adirondacks, that the fauna of that region is very similar to ours at Franconia. I have taken there every moth of his list with these exceptions: *Lithosia candida*, *Adoneta spinuloides*, *Arzama diffusa*, *Pseudanthrœcia coracias*, *Pityolita pedipalalis*, *Tortricodes bifidalis*, and perphaps three or four species of *Agrotis*, *Tæniocampa* and *Hadena*, as these last are not yet fully identified in my collection. Of *Lophopteryx elegans* Strk. I have a fine pair, male and female. They were taken at light in June, 1886, and were named for me by Mr. Hy. Edwards. Like Mr. McKnight's specimen, mine are suffused with brown from base to subterminal space. In other respects they answer to description of *Notodonta simplaria* Hy. Edw.—ANNIE TRUMBULL SLOSSON.

CAPTURING BEMBIDIUM AND OTHER SMALL COLEOPTERA.—It may prove a help to some of our numerous Coleopterists to know how to easily collect these active little beetles which are so common along the shores of lakes and rivers. Is there a collector who has not endeavored to pick them up between his (her?) thumb and forefinger and transfer the specimens to the cyanide or alcohol bottle, only to find them *non est* just as he supposes they are safely inside. Here is a method that worked very successfully with me while at Chautauqua, N. Y., during July and August of last Summer. Procure a two-drachm vial one-quarter full of chloroform or ether; a larger bottle containing alcohol and a penny camel's-hair brush. Now, having found a locality where the beetles are plenty, drop the brush in the ether and apply it to the specimens wanted. It is surprising to see how quickly they are put to sleep. Almost immediately they may be transferred to the alcohol bottle on the tip of the brush and you are ready for more. In this manner hundreds can be taken within a short time, and I am sure it would work admirably with the insects of other orders besides Coleoptera, especially where the species are minute, but too quick to take in the usual manner. Try it.—LEE B. WALTON, Kenka College, N. Y.

AILANTHUS FOLIAGE AND THE ROSE-BEETLE.—Concerning Professor Troop's note in the May number of ENTOMOLOGICAL NEWS, the New Jersey experience has been that the insect favors the blossom in preference to the leaves, which are little eaten. With us the *Ailanthus* is known as the "tallow tree," and the observation that dead beetles in abundance were found under the trees, led to the experiment with decoctions of the blossoms. The secret of the effect observed is in the word "later," that is, only late in the season the worn out specimens feed on *Ailanthus* and die naturally. I have seen the ground beneath a chestnut tree strewn in the same way; but all specimens were old, and had died of some senile weakness rather than from any poison contained in the food. The fox glove only seems to act as a poison on the virile insect, and this used as a decoction acted too slowly to be effective in protecting vineyards. Yet, it may be well to try a decoction of *Ailanthus* foliage. Finally, a printer's error makes it Bulletin "32" instead of 82.—Prof. J. B. SMITH.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Insects have been named for F. D. Twogood, D. G. Cox, D. B. Young, Charles U. Clark, J. S. Hine, W. T. Davis, M. V. Slingerland, J. H. Bomberger, C. H. T. Townsend, Henry Bird, C. M. Weed.

Entomological Literature.

INDIAN MUSEUM NOTES, II. Calcutta, 1891.—No. 1. (1 pl.) Economic Entomology: Miscellaneous Notes, E. C. Cotes, figs. A new species of Tineidæ,* Lord Walsingham, figs. The Baluchistan Melon Fly,* J. M. F. Bigot. American blight, E. T. Atkinson. Descriptions of new Coccidæ,* W. M. Maskell. A Darjiling Sal pest, G. C. Dudgeon. A new Psychid injurious to Sal,* F. Moore.—No. 2. The wild silk insects of India, E. C. Cotes, 14 pls.—No. 3. On white insect wax in India, E. C. Cotes, 1 pl.—No. 4. The locusts of Bengal, Madras, Assam and Bombay, id, 1 pl. —No. 5. Methods adopted in Tunis for destroying locusts, R. Drummond-Hay.

ANNALS AND MAGAZINE OF NATURAL HISTORY (6), ix, 52, London, April, 1892.—Description of a new genus and some new species of Heterocera from Central America, H. Druce. Descriptions of new genera and species of Pyralidæ contained in the British Museum collection,*† W. Warren. On some undescribed Cicadidæ, with synonymical notes,*† W. L. Distant.

THE IRISH NATURALIST, I, 1, Dublin, April, 1892. Edited by George H. Carpenter and Lloyd Praeger.—The Coleoptera of the Armagh district, Rev. W. F. Johnson.

LE NATURALISTE, Paris, April 1, and May 1, 1892.--Cabbage worms, P. Chretien, figs. Dichotomous tables for determining the European species of *Colias* (cont.), K. Bramson. Description of new Lepidoptera,* P. Dognin. On difference in development in Coleoptera, L. Planet, figs.

HARDWICKE'S SCIENCE GOSSIP, London, April, 1892.—A few remarks on our commonest spiders, K. H. Jones. Secreting glands in the feet of flies, W. Jenkinson, figs.

WEST VIRGINIA AGRICULTURAL EXPERIMENT STATION, Bull. No. 21, Charleston, W. Va., 1892.—Methods of dealing with injurious insects, A. D. Hopkins.

COMPTE RENDU, L'ACADEMIE DES SCIENCES, Paris, March 28, 1892.—On the mode of articulation of the abdominal rings (zigzag articulation) in Hymenoptera, G. Carlet.

COMPTE RENDU, SOCIETE DE BIOLOGIE, Paris, April 1, 1892.—Origin of the achromatic nuclear spindle in the seminal cells of *Scolopendra*, A. Prenant. The alar nerve in some apterous Coleoptera, A. Binet.—April 30th. Comparative researches on the organization of the brain in the principal groups of Arthropods, H. Viallanes. The nerve of the balancer in some Diptera, A. Binet.

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* Contains new species other than North American. † Contains new genera.

Bulletin de l'Academie Royale de Belgique (3), xxiii, 2, Brussels, 1892.—Protective resemblance in the animal kingdom, F. Plateau.

Journal of the Trinidad Field Naturalists' Club, I, 1, Port-of-Spain, April, 1892.—This is the first number of a new journal issued under the direction of a publication committee consisting of Henry Caracciolo, Esq., president, Prof. P. Carmody, F. I. C., Syl. Devenish, Esq., M. A., and Mr. R. R. Mole. The journal has for its object to keep those members of the Club in Europe, America, Venezuela, and throughout Trinidad *en rapport* with what the Club accomplishes. One of its special features will be Economic Entomology. Mr. Caracciolo is a valued correspondent of the News, and we wish him and his colleagues success in their new undertaking.

Societe Entomologique de Belgique, Compte Rendu, March 5, 1892.—The African Gomphina,*† E. de Selys-Longchamps. Insects of western Bengal: xv, Coprophagous Lamellicornia, H. von Schoenfeldt; xvi, Hydrocanthari,* Dr. M. Regimbart; xvii, List of a collection of Lepidoptera, Dr. H. Robbe. Lepidoptera from the Congo,* id. Materials for a study of the Tabanidæ of Belgium, L. Coucke.

Oregon Agricultural Experiment Station, Bull. No. 18, Corvallis, Ore., 1892.—Economic Entomology, F. L. Washburn.

Journal of the Horticultural Society, Columbus, Ohio, December, 1891.—Insect parasites, F. M. Webster, figs.

Entomologische Nachrichten, xviii, 6, Berlin, March, 1892.—*Brachyta bifasciata* Oliv. v. *caucasica*, C. Rost. List of Lucanoidæ, Scarabeidæ, Buprestidæ and Cerambycidæ collected near Nienghali in South China,* A. F. Nonfried.—7, 8, April, 1892. A new variety of *Lycæna* from Russia,* L. Krulikowsky. Sawfly studies,* Dr. Kriechbaumer. A new *Psilomastax*, id. On *Tryphon punctus* Grav., R. v. Stein. Contributions to the Coleopterous fauna of Africa and Madagascar,* A. F. Nonfried. Preliminary descriptions of three new Lepidoptera from Bismarckburg in Togoland, German West Africa,* Dr. F. Karsch.

Nature, London, April 7, 1892.—On insect colors II, F. H. P. Coste. —April 21, 1892. Pigments of Lepidoptera, F. G. Hopkins.

Lepidoptera Indica, by F. Moore, London: L. Reeve & Co., 1892. Pt. ix, pp. 177–208, pls. 65–71.

Zoologischer Anzeiger, Leipzig, April 11, 1892.—The development of the coxal gland in *Phalangium*, J. Lebedinsky, figs. New observations on symbiosis between Ants and Acacias, Dr. C. Keller. The Acacia-Crematogaster by Prof. Keller from Somaliland,* A. Forel.—April 25th. Labial palps of Hemiptera, Dr. N. Leon, fig.—May 2d. Systematic list of the Canarian Dermaptera and Orthoptera, with diagnoses of new genera and species,*† Dr. H. Kraus.

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* Contains new species other than North American. † Contains new genera.

ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, liii, 4, Leipzig, April 5, 1892.—On the phylogeny and ontogeny of the wing-veins of butterflies, Dr. A. Spuler, 2 pls.

THE AMERICAN NATURALIST, Phila., March, 1892.—Descriptions of new North American Bees, C. Robertson.

THE BRITISH NATURALIST, London, May, 1892.—The secondary sexual characters of the British Coleoptera, J. W. Ellis. Local lists, etc.

BERLINER ENTOMOLOGISCHE ZEITSCHRIFT, xxxvi, 2, Berlin, March, 1892.—New African, Central American and East Asiatic Melolonthidæ and Rutelidæ,* A. F. Nonfried. To the knowledge of the willow gall-flies,* J. J. Kieffer, 1 pl., figs. Communications on gall-flies,* id., figs. Arachnida from Ceylon and Minikoy collected by Drs. P. and F. Sarasin,*† Dr. F. Karsch, 3 pls. Second notice on the Apiocerina, C. R. Osten Sacken. *Arota rosaura* Karsch, Dr. F. Karsch, fig. Review of the Locustodeæ collected by Dr. Paul Preuss at the Barombi Station in Cameroons,*† id., figs. List of the Rutelidæ described after the publication of the Munich Catalogue, and Additions to the same, A. F. Nonfried. Further contributions to the beetle fauna of southern Asia and New Guinea,* id. On gall-fly larvæ, E. H. Ruebsaamen, 1 pl. New gall-flies and galls,* id. Synopsis of the described genera and species of the Blepharocediæ, C. R. Osten Sacken. On the Chætotaxy of *Cacoxenus indagator* Lw., id. Synonymy of *Antocha* O. S. and *Orimargula* Mik., id. Additions and corrections to the catalogue of the described species of South American Asilidæ by S. W. Williston in the Trans. Ent. Soc. xviii, 1891, id. New Rhopalocera,*† E. G. Honrath, 1 pl. Little-known butterflies, id. A new *Notodonta*,* id. A local variety of *Biston hirtarius*, H. Heymons. Two new Chinese dragonflies of the family Calopterygidæ,* Dr. F. Karsch. Results of the anatomical research on a lateral hybrid of *Smerinthus populi* L. with some general considerations, H. Tetens, 1 pl. figs. *Epinephele lithonus* var. *mincki*, T. Seebold.

REVUE D'ENTOMOLOGIE, CAEN, x, pp. 199–236.—Description of a new species of *Tropideres*,* Fr. Guillebeau. Contributions to the study of the Pentatomidæ,* Dr. E. Bergroth. Third note on the genus *Phaleria*, C. L. Rey.

THE ENTOMOLOGIST'S RECORD, London, April 15, 1892.—The genus *Acronycta* and its allies, Dr. T. A. Chapman. Ammonia, verdigris and black pins, W. H. Harwood, J. W. Tutt, A. Robinson.

INSECT LIFE, iv, 7 and 8, Washington, April, 1892.—The potato-tuber moth (*Lita solanella* Bd.), Eds., figs. A genus of *Mantis* egg-parasites, id., figs. Notes on the grain *Toxoptera*, F. M. Webster. The larger digger-wasp, C. V. Riley, figs. The habits of *Elasmus*, L. O. Howard, figs. Bees of great value to fruit and seed growers, F. Benton. Some bred West Virginia Braconidæ, A. D. Hopkins. Notes on the habits of some California Coleoptera, D. W. Coquillett. Early published references to some of our injurious insects, F. M. Webster. The color of a host and its relation to parasitism, C. W. Stiles and A. Hassall. The usual numerous notes.

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* Contains new species other than North American. † Contains new genera.

VERHANDLUNGEN DER K. K. ZOOL.-BOT. GESELLSCHAFT IN WIEN, xlii, 1, April, 1892.—On the so-called "stand still stage" in the development of Oestrid-larvæ, Dr. F. Brauer. Four new species of Hymenoptera,* Dr. R. Cobelli. Communications on gall-flies,* E. H. Ruebsaamen, 1 pl. figs. The Austrian species of the genus *Hilara* Melg.,* Prof. G. Strobl.

PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, 1892, pt. 1, January–March.—The spider fauna of the Upper Cayuga Lake basin, N. Banks, 5 pls. *Drexelia*, a new genus of spiders, Rev. H. C. McCook, D. D. Greenland Lepidoptera, H. Skinner, M. D., and L. W. Mengel.

TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1892, pt. 1, March, 1892.—New species of Heterocera from the Khasia Hills,*† ii, Col. C. Swinhoe, 1 pl. Additional notes and observations on the life-history of *Atypus piceus*, F. Enock. Notes on *Lycæna* (recte *Thecla*) *rhymnus*, *tengstrœmii* and *pretiosa*, G. T. Bethune-Baker, 1 pl. The effects of artificial temperature on the coloring of several species of Lepidoptera, with an account of some experiments on the effects of light, F. Merrifield. On variation in the color of cocoons of *Eriogaster lanestris* and *Saturnia carpini*, W. Bateson. On the classification of the Geometrina of the European fauna,† E. Meyrick, 1 pl.

ARCHIVES DE PHYSIOLOGIE NORMALE ET PATHLOGIQUE (2), iv, 2, Paris, April, 1892.—The intermediary body of Fleming in the seminal cells of *Scolopendra* and *Lithobius*, A. Prenant, 1 pl.

ZOOLOGISCHE JAHRBUCHER, vi, 2, Jena, March 30, 1892.—The tree whiting, *Aporia cratægi* Hb., Dr. K. Eckstein. *Tegonotus*, a new Phytoptid genus,* Dr. A. Nalepa, 1 pl.

BOLLETINO DELLA SOCIETA ROMANA PER GLI STUDI ZOOLOGICI, I, 1 and 2, Rome, 1892.—On species of Hemiptera of the R. Museo Zoologico of Rome, Dr. C. de Fiore.

TRANSACTIONS OF THE ACADEMY OF SCIENCE OF ST. LOUIS, v, 3–4, 1892.—Transformations of a Carabid (*Plochionus timidus*) and observations on a Coccinellid enemy of the red spider, J. C. Duffey.

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* Contains new species other than North American. † Contains new genera.

Canadian Entomologist, London, Ont., May, 1892.—Miscellaneous notes on butterflies, larvæ, etc., W. H. Edwards. Two distinguished settlers, W. H. Harrington. New North American Homoptera, iv, E. P. Van Duzee. Packing insects for transportation, H. F. Wickham. Notes on North American Hesperidæ, E. M. Aaron. New North American Microlepidoptera, Prof. C. H. Fernald. Notes and descriptions of Bombylidæ, D. W. Coquillett. A Sarcophagid parasite of *Cimbex americana*, C. H. T. Townsend. Ovipositing in the genus *Argynnis*, H. Skinner. Notes on *Melittia ceto* Westw., J. B. Smith. A new *Ischalia* from Vancouver Island, W. H. Harrington. Obituary of Abbe Provancher, id.

Canadian Record of Science, v, 1, Montreal, January, 1892.—List of Coleoptera collected in the vicinity of St. Jerome, Que., J. F. Hausen.

Nova Acta Academiæ Caes. Leop.-Carol. Germanicæ Naturæ Curiosorum, lv, Halle, 1891.—New gall mites,* Dr. A. Nalepa, 4 pls.

Bolletino dei Musei di Zoologia ed Anatomia comparata d. R. Universita di Torino, No. 115, March 9, 1892.—On the variability of the metasternal apophysis of *Dytiscus marginalis* L., A. Griffini, figs.—116, March 15. On the parasitism of a larva of *Aricia* in a *Carabus*, Dr. E. Giglio-Tos.—117, March 18. A new genus of Syrphidæ, id.—118, March 24. On two genera of Syrphidæ *Rhopalosyrphus* and *Omegasyrphus*, id.

Anales de la Sociedad Cientifica Argentina, xxxiii, 2, 3, Buenos Ayres, February, March, 1892.—New Hemiptera of the Argentine and Uruguayan faunas (cont.),* Dr. C. Berg. Argentine Dipterology, Syrphidæ (cont.), F. L. Arribalzaga.

The Entomologist, London, May, 1892.—Note on generic characters in the Noctuidæ, J. B. Smith. On some Macro-Lepidoptera collected at Rannoch in 1891, R. Adkin. Notes on British Lepidoptera, the genus *Melanippe* (cont.), R. South. Preliminary list of the insect fauna of Middlesex (cont.), T. D. A. Cockerell. Green and brown pupæ of *Papilio*, F. W. Frohawk, F. P. Bedford.

Bulletin of the Ohio Agricultural Experiment Station (2), v, 4, Columbus, Ohio, April, 1892.—Insects which burrow in the stem of wheat, F. M. Webster.

The Entomologist's Monthly Magazine, London, May, 1892.—Our Rush-feeding *Coleophoræ*,* J. H. Wood. Further notes on *Eupithecia extensaria*, G. T. Porritt. On a new *Onthophilus* from Mexico, G. Lewis. Annotated list of British Tachiniidæ (cont.), R. H. Meade. The butterflies of Rawal Pindi and the Murree Hills, Punjab (cont.), N. Manders. On new or little-known Coccidæ, chiefly English–2,* R. Newstead, 1 pl.

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* Contains new species other than North American.

SEVENTH REPORT on the injurious and other insects of the State of New York by J. A. Lintner, Ph. D., State Entomologist, Albany, 1892. Pp. 200–404, 40 figs.

BULLETIN DE LA SOCIETE VAUDOISE DES SCIENCES NATURELLES (3), xxvii, Lausanne, February, 1892.—Origin of the existing Ant fauna of Europe, C. Emery.

PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON, 1891, pt. 4, April 1, 1892.—On the Micro-Lepidoptera of the West Indies, Lord Walsingham, 1 pl. On the spiders of the island of St. Vincent, E. Simon, 1 pl. Descriptions of new butterflies collected by Mr. F. J. Jackson, F. Z. S., in British East Africa during his recent expedition, II, E. M. Sharpe, 1 pl. On the association of Gamasids* with Ants, A. D. Michael, 2 pls.

TRANSACTIONS AND PROCEEDINGS AND REPORT OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA, xiv, 2, Adelaide, December, 1891.—Further notes on Australian Coleoptera, with descriptions of new genera and species, Rev. T. Blackburn.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

LEPIDOPTERA.

Aegeria armasata Druce, Ann. Mag. N. H. (6), ix, p. 275, *Ae. mardia* p. 275, *Melitta beckeri* p. 276, Durango, Mex. *Metosamia* (n. g. Saturniidæ), p. 276, *M. godmani*, p. 277, Oaxaca, Mex. *Telea aurelia*, *Phassus marcius*, p. 278, Durango.

Pyralidæ: *Sericoplaga* n. gen. Warren, Ann. Mag. N. H. (6), ix, p. 295. *S. externalis*, p. 296, Tex.

Anarta besla, Skinner and Mengel, Proc. Acad. Phila., 1892, p. 158; *Glaucopteryx immaculata*, p. 159, Greenland.

Argynnis oweni, Edwards, Can. Ent. xxiv, p. 105, Cal. *A. cornelia*, 106, Col.

Teras comandrana Fernald, Can. Ent. xxiv, p. 121, Mass., Pa., Tex. *Cacœcia magnoliana*, p. 121, N. Y. *Pyrausta magdalena*, p. 122, Tex., Fla. *Coleophora fletcherella*, p. 122, Ont., N. Y.

Four n. gen. 8 n. sp. Pterophoridæ, 4 n. gen. 31 n. sp. Tineidæ, Walsingham, Proc. Zool. Soc. Lond., 1891, pp. 492–549, West Indies.

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* Contains new species other than North American.

DIPTERA.

Sarcophaga helicis Townsend, Psyche vi, p. 221, Ohio. *S. imbicis* Townsend, Can. Ent. xxiv, p. 126, S. Dak.

Exoprosopa grata, Coquillett, Can. Ent. xxiv, p. 124, Cal., Wash. *Geron fasciola*, p. 125; *G. capax*, p. 126, Cal.

Camerania n. gen. Syrphidæ, Giglio-Tos, Bull. Mus. Zool. Anat. Comp. Univ. Torino, No. 117, for *Temnocera megacephala?* Loew.

Blepharipeza rufescens Townsend, Trans. Am. Ent. Soc. xix, p. 90, Md. *Hystricia aldrichi*, p. 91, S. Dak. *Atropharista* n. gen. Tachinidæ, p. 92; *A. jurinoides*, p. 92, S. Dak. *Echinomyia dakotensis*, p. 94, S. Dak. *Tachinomyia* n. gen. Tachinidæ, p. 96; *T. robusta*, p. 96.

HYMENOPTERA.

Eleven n. sp. *Halictus*, 1 n. sp. *Andrena*, 1 n. sp. *Calliopsis*, 1 n. sp. *Melissodes*, Robertson, Amer. Nat. xxvi, pp. 267–274, U. S.

Ceropales cressoni Fox, Trans. Am. Ent. Soc. xix, p. 58, Neb., Wash.

HEMIPTERA.

Fourteen n. sp. *Phlepsius* Van Duzee, Trans. Am. Ent. Soc. xix, pp. 63–82, U. S.

Dendrocoris fruticola Bergroth, Rev. d'Ent. x, p. 228, Fla.

Gnathodus impictus, abdominalis, Van Duzee, Can. Ent. xxiv, p. 113, N. J. *Athysanus comma*, p. 114, Ia.; *A. bicolor*, p. 114, Kan., Miss.; *A. obtusus*, p. 115, Miss. *Deltocephalus flavocostatus*, p. 116, Miss.

COLEOPTERA.

Isonychus prasinus Nonfried, Berl. Ent. Zeit. xxxvi, p. 223; *Ceraspis elegans*, p. 223; *C. imitatrix*, p. 224; *Epectinaspis honduræ*, p. 231; *Phyllopertha latitarsis*, p. 233; *P. sericeo-micans*, p. 233, Honduras.

Ischalia vancouverensis Harrington, Can. Ent. xxiv, p. 132, Vanc. Is.

Onthophilus julii Lewis, Ent. Mo. Mag. (2), II, p. 124, Mex.

ARANEINA.

One hundred and fourteen n. sp., Banks, Proc. Acad. Nat. Sci. Phila., 1892, pp. 11–81, 5 pls.

Drexelia n. gen. for *Epeira directa* Hentz, McCook, id., p. 127.

Fourteen n. gen. 31 n. sp. Simon, Proc. Zool. Soc. Lond. 1891, pp. 549–575, St. Vincent.

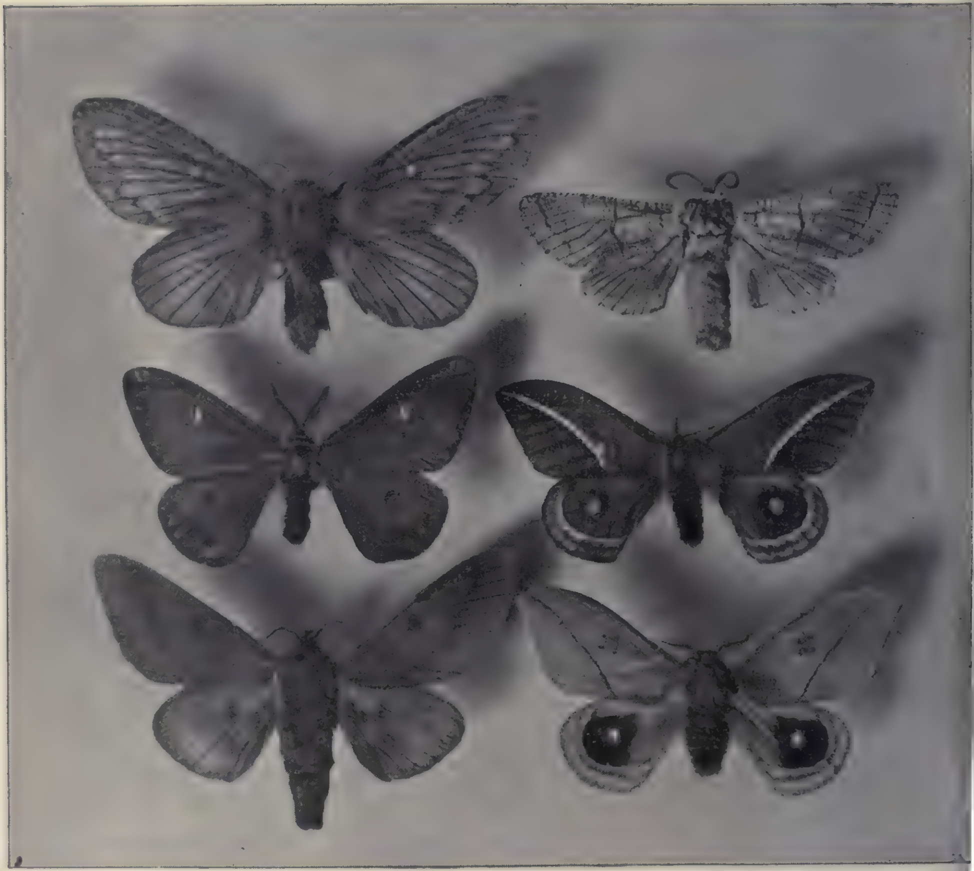
Doings of Societies.

A MEETING OF THE ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA was held April 28th Meeting called to order at 8.20 P. M. In the absence of the director Mr. James Ridings was called to preside. Members present: Ridings, G. B. Cresson, Liebeck, Skinner, Laurent. Associates: Calvert, Fox, Dr. Castle. Mr. Henry Bird, of Rye, N. Y., presented two specimens of *Gortyna inquæsita*. Four specimens of Hymenoptera were presented by Mrs. Annie Trumbull Slosson, including an undescribed species from Florida. Mr. Calvert presented a paper for publication in the "Transactions" of the American Entomological Society, which refers to material (Odonata) collected by the U. S. Eclipse Expedition to the Congo and by Dr. W. L. Abbott at Zanzibar and in the Kalimanjaro region. Inasmuch as the paper, in its entirety presented to the U. S. National Museum for publication, would be long in coming out he had, by permission from Dr. Riley, presented an abstract to night. Mr. Calvert reviewed the contents of the paper and made drawings on the black-board to illustrate points in the neuration of the old world genus *Orthetrum*. The characters of some of the species were dwelt on at length. Mr. Calvert also exhibited a specimen of *Pantala hymenæa* Say, which had been obtained from Mr. C. W. Johnson, to whom it had been presented by Mr. H. D. Coyle, a park guard, who had captured it in Fairmount Park.

HENRY SKINNER, *Recorder*.

ENTOMOLOGICAL SOCIETY OF WASHINGTON.—The seventy-ninth regular meeting was held March 3, 1892, at the residence of Mr. E. A. Schwarz. Mr. Wm. Ross Harris, of Texas, was elected a corresponding member of the Society. Dr. Stiles gave a talk on the "Histology of Ticks." He made some blackboard sketches and exhibited a number of slides illustrating the subject. He dwelt especially on the cuticular tissue, alimentary canal, stigma, excretory organs and glands of the head. Discussed by Dr. Marx. Dr. Theo. Gill presented a paper on "The Larva of Insects as an intercalated Stage." He quoted and criticised certain statements in Agassiz, "Class. of Animals from Embry. Data." From these criticisms he argued to show that the larva of insects was an added or intercalated stage. He had prepared a table giving the distribution of fossil insects. This showed that the Orthopteroid, Neuropteroid, Hemipteroid and Coleopteroid insects were not only the insects of the Palæozoic, but also the prevailing insect types of the Mesozoic age. The Diptera, Lepidoptera and Hymenoptera, which have a larva or caterpillar stage, were later developments. Discussed by Messrs. Ashmead, Banks and Gill. NATHAN BANKS, *Recording Secretary*.

ENTOMOLOGICAL NEWS for May, was mailed May 2, 1892.



GLOVERIA ARIZONENSIS Pack.
CALOSATURNIA MENDOCINO Behr.
CITHERONIA SEPULCRALIS G. & R.

COSSUS BRUCEI French.
HYPERCHIRIA ZEPHYRIA Grt.
HYPERCHIRIA PAMINA Neum.

ENTOMOLOGICAL NEWS
AND
PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,
ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. SEPTEMBER, 1892. No. 7.

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OUR picture this month represents some rare moths generously loaned for illustration from the fine collection of I. C. Martindale, Esq. The negative was kindly made for the NEWS by Dr. W. D. Robinson, of Philadelphia. *Gloveria arizonensis* is a gray moth, and its name indicates its home. *Calosaturnia mendocino* is from California; the primaries are dark smoky-brown, and the inferiors tawny, with a black band as shown in figure. *Citheronia sepulcralis* is found from Pennsylvania southward; the primaries are dove color, and the secondaries are same color, but lighter, and the markings are wine color. *Cossus brucei*, from Colorado, is white with black lines. *Hyperchiria zephyria* is from New Mexico, and was discovered by Prof. F. H. Snow. The white line across the primaries is quite characteristic. *Hyperchiria pamina* is readily distinguished by its pale color; it is a very pretty species. The NEWS hopes to publish figures of moths, as there is such a demand for figures in the Heterocera. As the methods improve we will descend in the scale and study the smaller species. The figures on plate are somewhat smaller than the normal size of the insects.—ED.

Some Deformities in the Abdominal Segments of Tachinidæ.

By C. H. Tyler Townsend.

In the examination of material in the Tachinidæ, I have run across several cases of deformity in the abdominal segments, which are worthy of being placed on record as a contribution to the subject. Four specimens, belonging to as many different species and genera, are noticed below.

Echinomyia thomsoni Will.—A ♀, taken June 8th, Las Cruces, N. M., exhibits the following peculiarities: The first segment is normal; the right half of the second segment is quite normal, but the left half is very considerably lengthened and joins the fourth segment for nearly one-third of its width, crowding out the third segment entirely on that side; the third segment is represented by about two-thirds of that segment on the right side above, and about one-half of the segment below; the fourth or anal segment is but slightly lengthened on its left one-third. Thus the abdomen appears drawn up on the left side, the anal segment being set on to the second, on the left, at an acute angle to supply the deficiency in the third segment. None of the macrochætæ belonging to the third segment are present at the suture between the second and fourth segments, and this suture is abnormally deep and wide, and presents the appearance of a scar.

Hyphantrophaga hyphantriæ Twns.—A ♀, bred from *Hyphantria cunea*, issued August 25th, Las Cruces, N. M., presents a more peculiar deformity. In this specimen the abdomen is drawn up on the right side; the first segment is somewhat lengthened and bulging behind on the right side, making the suture between the first and second segments sinuate; the second and third segments are separated by a suture on the left side extending hardly to the median line, while on the right they are merged into a single long segment about two-thirds the normal length of the two; the anal segment is quite normal in its proportions, but points a little to the right in consequence of that side of the abdomen being shortened. The normal hind marginal macrochætæ of the second and third segments are wholly wanting on the right side. The ventral portion presents the same appearance.

Clytia flava Twns.—A ♂, from S. Illinois (Robertson), exhibits a still more marked deformity. The second segment seems to be split diagonally by an abnormal suture running from the left anterior corner to the right posterior one; a blind suture on the right side occupies nearly the place of the normal one between the first and second segments, while a similar suture on the left side occupies the position of the normal one between the second and third segments; these two sutures reach only to the median line and there disappear; the anal segment is quite normal in form, but is somewhat inclined toward the right, as the posterior margin of what should normally constitute the third segment is a little oblique to the median line and is inclined anteriorly on the right. There is no special abnormal feature in the disposition of the macrochætæ, except that the normal median marginal pair of the second segment is obsolete and that of the first segment nearly so. The ventral portion does not share the deformity to such a degree as the dorsal. This specimen shows an inclination toward either an absorption of one abdominal segment, or the acquisition of a fifth one.

Eustomatodexia insulensis Twns. ms.—A ♂, from Jamaica (C. W. Johnson), May, shows the following peculiarities: The first segment is lengthened by one-fourth on the right half, where it joins the right side of the third segment, its posterior suture being sinuate; only the left half of the second segment is present, extending to and including the median line, its anterior and posterior sutures uniting in a curve on the median line; the right side of the third segment is lengthened by one-third, which still leaves the right side of the abdomen somewhat shortened or drawn up, on account of the absence of the second segment on that side; the fourth or anal segment is normal. The venter agrees with the dorsum; the macrochætæ on hind margins of last two segments are normal; the normal lateral marginal one on each side of first segment is present; the lateral marginal pair of the second segment is present only on the left side, while the normal median marginal pair is represented by a single macrochæta.

The last mentioned individual is a *dexiid*. In all of these species the normal number of abdominal segments is four. I have referred to the antero-posterior diameter of the segments as the length, although it is the lesser diameter.

In all probability the deformities above described were due to injuries received in the larval, not in the pupal state.

A new GLUPHISIA from the Pacific coast.

By Harrison G. Dyar.

Gluphisia quinquelinea n. sp. ♂.—Head and thorax dark gray without marks. Abdomen and legs paler gray; fore wings even gray, not quite as dark as thorax, black and whitish scales and hairs mixed, not anywhere distinctly irrorate. A space at the base between median and internal veins, for a short distance on both sides of the basal line, as well as the lower half of median space is shaded with an obscure flesh-colored tint. Basal line black, starting on costa 2 mm. from base, strongly inwardly dentate on subcostal, thence proceeding straight towards internal margin, slightly widened and marked with a few bluish metallic scales on submedian fold, but ending at internal vein; transverse anterior line black, rather broad, nearly straight from costa to internal margin, arcuated inwards a little across internal vein; median line blackish, rather obscure, parallel with t. a. line slightly undulate and diffuse centrally; transverse posterior line black, nearly straight from costa to internal margin, slightly undulate and inwardly produced on submedian fold. It is slightly oblique to the median line, starting from the costa at 2 mm. distance from it, and nearly joining it at internal margin. The t. a. median and t. p. lines are each marked with a few bluish metallic scales in the submedian interspace; subterminal line black, broken by the gray veins, outwardly arcuate from costa to vein 5 and again from vein 5 to vein 2, then straight to anal angle; fringe gray, faintly spotted with blackish. Secondaries pale gray, whitish at base, shading into blackish at anal angle. Below uniform whitish gray, darker on the costa of fore wings. Expanse 31 mm.

Described from one male, Portland, Oreg. A table to separate the American species of *Gluphisia* will appear later in "Psyche."

A Local List of the Genus CATOCALA.

By Geo. A. Ehrman, Pittsburg, Pa.

The genus *Catocala* is well represented in western Pennsylvania as the following list will show. I have taken all the species and varieties quoted, during the last twelve years of my entomological labors. Prof. John B. Smith has listed seventy-eight species apart from the varieties that are found in Boreal America. Of his list I have taken thirty-two species in Allegheny County, Pa., not mentioning numberless variations.

CATOCALA.

nubilis Hbn., common; *gracilis* Edw., rare; *minuta* Edw., rare; *grynea* Cram., rare; *cerogama* Gn., rare; *ultronia* Hbn., rare:

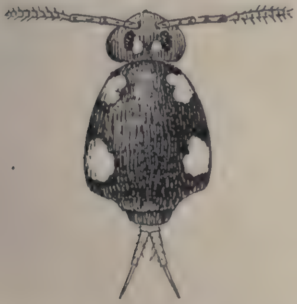
coccinata Grt., rare; *ilia* Cram., common; *parta* Gn., common; *unijuga* Walk., rare; *briseis* Edw., rare; *concumbens* Walk., rare; *cara* Gn., common; *amatrix* Hbn., rare; *tristis* Edw., rare; *epione* Dru., common; *antinympha* Hbn., rare; *serena* Edw., common; *habilis* Grt., common; *innubens* Gn., common; v. C, *scintillans* G. & R., rare; *paleogama* Gn., common; v. A, *phalanga* Grt., rare; *neogama* S. & A., common; *subnata* Grt., common; *piatrix* Grt., rare; *nebulosa* Edw., rare; *judith* Strk., rare; *robinsonii* Grt., rare; *retecta* Grt., rare; v. A, *flebilis* Grt., rare; *vidua* S. & A., rare; *lacrymosa* Gn., rare; v. D, *paulina* H. Edw., rare; *insolabilis* Gn., rare; *obscura* Strk., common; v. A, *residua* Grt., rare.

I have followed in the footsteps of Prof. John B. Smith for my classification of this list, and no matter how much I dislike the system of his Rhopalocera, I find his system for the Heterocera is the best that we ever have had for the American student up to the present time.

A NEW SMYNTHURUS.

By F. L. HARVEY, Orono, Me.

Smynthurus 6-maculata n. sp.—Deep blue-black, with four conspicuous enamel-white spots on the body and two smaller ones between the eyes, located as shown in the cut. The posterior pair of spots on the body largest, both pairs on the body somewhat reniform in outline with the sinuses on the dorsal side. Antennæ and legs paler, shaded with purple. Eye patches conspicuous and darker than the coloring of the head. Head broader than long, nearly in the ratio of 3:2. Body broad behind, where the breadth about equals the length, abruptly narrowing from the broadest part to the last segments. Antennæ slender, nearly two-thirds the length of the body and head. The joints in the ratio of 2:3:4:8, and elbowed between the third and fourth. The terminal segment composed of about nine subjoints. Elater long, slender, the branches of the fork widely spreading, second and third joints equal, the terminal segment conical, slender and ending in a point. Legs rather long and stout; claws large.



Measurements.—Total length .7—1 mm. Parts of a full grown specimen about as follows: head .2 mm. long, .3 mm. broad; antennæ, 6 mm.; ratio of segments 2:3:4-8; body .8 x .8 mm.; spring .45 mm.; second and third segments each .16 mm.; largest white spot on body about .18 mm., or nearly one-fifth the body and head.

Hab.—Orono, Me., July, August and September, 1891, F. L. Harvey. Under bark on stumps and on herbage in the woods. Several specimens examined. One specimen was taken July 7, 1891, with *Papirus marmoratus* Pack. under the loose bark of a fir tree stump. During July, August and September, they were occasionally seen upon grass and other plants in the woods. The accompanying cut was drawn for the writer from live specimens by Mr. J. H. Emerton, Boston. It shows the insect magnified about thirty times and a little too broad, due to compression necessary to hold it still while drawing.

This species is apparently related to *S. quadrimaculata* Ryder (Proc. Acad. Nat. Sci. Phila., 1878, p. 335), but differs in the larger size, broader body, purplish color and white spots between the eyes. The dark blue-black color of the body, cleared by balsam, appears decidedly purple, while the antennæ and legs are pale purple naturally. This form is rather sluggish, but jumps well when disturbed. A beautiful species, not easily detected because of its small size and dark color.

Description of four new species of Fossorial Hymenoptera from California.

By WILLIAM J. FOX, Phila., Pa.

Sphex (Prionoyx) ferrugineus n. sp. ♀.—Ferruginous; tips of mandibles, ocellar region, antennæ, except joints one, two and basal half of third and two longitudinal marks on metanotum black; front, face, clypeus and the thorax densely covered with bright silvery pubescence. Wings hyaline, nervures brownish; clypeus strongly convex, its anterior margin rounded, entire; inner eye margins distinctly converging towards the clypeus; frontal furrow strong, beginning from a depression before the anterior ocellus; scape of antennæ long, but much shorter than first joint of flagellum, this latter a little longer than the two following ones united, these joints in length about equal; prothorax above very broad and convex, not impressed; dorsulum with two parallel, raised, smooth, broad ridges, which extend from base almost to apex; scutellum strongly and widely furrowed medially, having the appearance of being bituberculate; metanotum obliquely striated, the striæ are only seen where the metanotum is black, being covered by the silvery pubescence elsewhere; first recurrent nervure received by the first submarginal cell a little before the apex.

the second recurrent nervure interstitial; third submarginal cell much narrowed at the top; petiole nearly as long as joints 1 and 2 of hind tarsi and slightly curved; all the tibiæ and tarsi spinose, the anterior tarsi ciliated with abundant, fine, whitish bristles on the outer side, the inner side of first joint with several stronger, but shorter bristles, the femora and tibiæ sparsely clothed with long, pale hairs; longer spur of hind tibiæ within on the apical half with several blunt spines, the basal half with close-set bristles. Length 19 mm.

Described from one specimen, Los Angeles, Cal. (D. W. Coquillett). The U. S. National Museum collection contains six other specimens of this species.

Pseudagenia Blaisdelli n. sp. ♀.—Ferruginous; ocellar region black; clypeus convex, the anterior margin slightly incurved; frontal furrow distinct, though not strong; space between eyes at top and beneath about equal, if anything wider at the bottom; first joint of flagellum less than one-third longer than the second, this latter about one-fifth longer than the third; inner eye margins strongly incurved; ocelli rather small; posterior margin of prothorax slightly angular, scutellum with a feeble, longitudinal, raised line, medially; metathorax rounded behind. Wings subfuscous, the apical margins darker, first recurrent nervure received by the second submarginal cell at the middle, the second recurrent nervure is received by the third submarginal cell a little beyond the middle; third submarginal cell narrowed nearly one-half at the top; the medial and posterior tibiæ very feebly spinose; posterior tarsi very long, the first two joints united being as long, or a little longer than the hind tibiæ; longer spur of hind tibiæ about one-third as long as the first joint of hind tarsi; the claws armed with a strong basal tooth. Abdomen with a sparse, sericeous pile. Length 9—10 mm.

San Diego, Cal., Aug. 23, 1891, sent me by Dr. F. E. Blaisdell, of Coranado, to whom I take pleasure in dedicating this pretty species. There are other examples in the collections of the Amer. Ent. Soc. and the U. S. Nat. Museum. It is related to *Pseud. melanocephala* Cam. from Mexico.

Planiceps planatus n. sp. ♀.—Black with bluish and purplish reflections; clypeus planate, shining, with a few scattered punctures, its anterior margin truncate medially, the sides rounded; behind the antennæ there is a short, longitudinal, dimple-like impression; antennæ situated in two strong excavations; the clypeus produced back between these excavations; scape shining, the remainder of the antennæ opaque, first joint of flagellum about one-fifth longer than the second, narrowed to the base; when viewed from the front the occiput is depressed medially; mandibles reddish, posterior margin of prothorax subarcuate, nearly transverse; metathorax with a slight trace of an impressed line on upper surface, the posterior face with strong, transverse folds, which become obsolete medially; suture between meso- and metapleuræ marked by small foveæ; last dorsal and ventral segments with long, black hairs. Legs black, the tibiæ and tarsi more or less armed with distinct spines; the anterior tibiæ and tarsi clothed with a sericeous pile; tarsal claws armed with a large, acute tooth at base. Wings very dark, with a slight violaceous reflection, apical margins darker. Length 14 mm.

Two specimens; San Diego, Cal. (Blaisdell) Related to *P. lævifrons* Cr. and *P. vicinus* Cr. The fact of this species having three submarginal cells would place it in *Parapompilus* Cress. (non Smith), which is but a section of *Planiceps*. *Parapompilus* Sm. has the wings much abbreviated.

Sphærophthalma anthracina n. sp. ♂.—Entirely black, densely clothed with long, black pubescence. Head strongly punctured; scape clothed with black pubescence; thorax strongly punctured, the metathorax with very large punctures or pits, with the pubescence sparser. Wings strongly fuscous, with three submarginal cells, the third of which has the outer nervure angulate. Abdomen strongly punctured; first abdominal segment sessile with the second. Length 9 mm.

Two specimens; San Diego, Cal. (Blaisdell) This is our only species that is entirely black.

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ELEMENTARY ENTOMOLOGY.

LEPIDOPTERA–HETEROCERA (Moths).

By Prof. John B. Smith, New Brunswick, N. J.

The Agaristidæ, as they are represented in our fauna are rather unsatisfactorily defined, and the position of *Eudryas* and allies is not settled. Good authorities have referred these forms to the Bombyces or Noctuidæ, and the characters allying *Eudryas* to *Alypia* are in the larva rather than the imago state. Species of *Alypia* are found in all parts of our country and the family characters are drawn from this genus. The antennæ are slender, thickened beyond the middle and then gradually drawn out to a point. The body is moderate in size, the head rather small, with a pointed front; ocelli present, palpi distinct. The primaries are 12-veined, the internal (v. 1) simple, not forked at base, 3, 4 and 5 rather close together from the end of the median; 6 to 10 surrounding or out of an accessory cell at the tip of the subcostal. This is almost exactly as in the Noctuidæ save that the internal vein in the latter family is forked at base. The secondaries have eight veins, the two internal veins counting as one, vein 5 is almost midway between 4 and 6, and the costal is out of the subcostal a short distance from the base. The venation of the secondaries is Bombycid rather than Noctuid in character. The antennal structure is the best and most obvious character. The species strictly belonging to this family are usually black in color with white or yellow spots or blotches and often irrorate with blue scales. They fly by day as a rule, and our common eastern species is, as a larva, quite destructive to grape.

The Syntomidæ are poorly represented in our fauna, but are rich in genera and species in the tropics of both hemispheres. They are rather small insects with filiform antennæ, ocelli sometimes absent, but more usually present, body usually stout, primaries large and secondaries usually proportionately small. The secondaries have only one internal vein and lack the costal vein altogether. There are never more than seven veins all told and sometimes only four. The primaries have one internal vein; veins 2 to 5 are quite widely separated, veins 7 to 10 from one stalk and crowded together close to the apex. Most of the genera are found only in the southern part of our country, but *Lycomorpha*, which is an aberrant member of the family, extends into Canada. Our common species is *L. pholus*, and has the wings yellow at base and black toward the tip. Though this species belongs, structurally, to the Syntomidæ, it gives but a very feeble idea of the beautiful forms that are allied to it in more congenial climes. Often the wings are transparent or nearly so, and bright, even striking colors abound. Odd and interesting structural modifications are common, and one of these I have described in volume 1 of "Entomologica Americana," where will be found a complete study of *Cosmosoma omphale*.

The Pyromorphidæ are moderate or small-sized insects, often with thinly scaled semi-transparent wings, slender body and filiform antennæ, which in the male are often lengthily pectinated. The head is small but distinct, and the ocelli are large and prominent. The venation is distinctive. On the primaries there are two inner or free veins, and on the secondaries there are three such veins. The costal vein of the secondaries is wanting, making a combination not paralleled in any other family. The species are rare as a rule, and are mostly southern or southwestern, a few only extending to the New England States. *Harrisina americana* is the most common and best known species, and differs from the typical genus in the much narrower wings. Black colors with reddish or yellowish shades basally and on the collar predominate in this family.

The Ctenuchidæ contain species of larger size making a very distinct step toward the Lithosiidæ. In external appearance and habitus they are very like the Pyromorphidæ, *Scepsis* having almost precisely the form of *Harrisina*, and in this family the male antennæ are also lengthily pectinated. But the venation is entirely different, the primaries having only one, the secondaries only two internal of free veins. The secondaries yet lack the costal vein. The species of this family are represented in all parts of our territory and some of them are locally common. *Ctenucha virginica* and *Scepsis fulvicollis* are of our best known eastern species.

All the families mentioned in this paper were formerly included under the term Zygænidæ. A more detailed statement of characters, with figures illustrating the same, can be found in the Trans. Am. Ent. Soc. xii, p. 77.

A NEW SPECIES OF PAMPHILA.

By Henry Skinner, M. D.

Pamphila errans n. sp. ♂.—Expands 1¼ inches (being the distance from the middle of thorax to tip of one wing, doubled); female a little more; upperside dark brown; superiors have two small yellowish spots on the costal nervures about one-third the distance from tip to thorax, and an interrupted row of four spots of the same color on an imaginary line running from the tip to near the middle of the interior margin; the uppermost of these is a mere dot, and is situated at end of discoidal, just below the point of cell. The second is wedge shaped with the point of wedge inward, and is at the junction of two nervures running into a point at the discoidal cell. The third spot is nearly quadrate and larger than the other two. The fourth is resting on the submedian nervure and is nearly a rectangle. The fringes are yellowish white, darker towards the tips. Inferiors are immaculate, with the inner two-thirds covered by long hairs of a lighter shade;

underside is considerably lighter in color, and the neuration is yellowish and quite distinct. The spots on the superiors are the counterpart of those above, except that there are two small spots instead of the first one of the row above. The inferiors have three spots of same color, the first in the third subcostal space; the second in the fourth subcostal space, and the third in the first median interspace. Fringes of superiors dark, and of inferiors same as above. Body and antennæ above dark brown; below body, palpi and antennæ yellowish, with a dark stripe down the centre of the abdomen.

The species above is almost the exact counterpart of *ocola* Edw. but smaller, and below is very close to *panoquin* and *panoquinoides*. I have specimens from California received from Mr. H. G. Dyar and Dr. Blaisdell, and also specimens from Texas.

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PREPARATORY STAGES OF PAMPHILA ERRANS Skinner.

By Harrison G. Dyar.

Egg.—Elliptic-oval, flattened at base, a round, slightly depressed spot on vertex. Smooth, slightly shiny, sordid white, more distinctly white on top and in several obscure vertical streaks on the sides; under the microscope covered with little regular raised reticulations, becoming less distinct at the micropyle. Diameter .8 mm. Laid singly on the upperside near the base of a blade of the food-plant.

First larval stage.—Head rounded triangular, nearly pointed at vertex, which surpasses the body, lobes not separate; smooth, dark brown, blackish in front; a small, indistinct, whitish line above the mouth; width .45 mm. Body at first small, entirely pale yellow; later long, cylindrical, of uniform size; feet normal, but short; segmental incisures shallow, color uniform pale yellowish green, with double dorsal and single subdorsal, narrow, even yellowish lines. Anal plate large, circular, projecting and bearing a few pale hairs. The little larva rests on the upperside of a blade in the fold near its base, feeding entirely or mainly during the night.

Second stage.—Head rounded triangular, very slightly notched on vertex, somewhat shiny, minutely punctured and furnished with scattered pile; pale whitish with a yellow tinge, a broad brown band from above base of antennæ to vertex, joining the one from the other side below the apex of the head and another similar fainter band behind and parallel to this passing behind the vertex; mouth brown, width .7 mm. Body light green, not shiny, transversely annulated, the two dorsal and subdorsal lines distinct, narrow, pale yellow, with even edges; they run the whole length of the body, and the subdorsal line is slightly wider than the dorsal one. Anal plate rounded, projecting with some pale hairs.

Third stage.—Head rounded triangular, bulging in front and at the sides, clypeus not depressed, pale green with many minute blackish dots, the brown bands as before, but much less distinct; labrum whitish, jaws and ocelli black; surface minutely pilose, width 1.1 mm. Body much as before, but more of the color of grass, covered with very minute, dark green dots; the pale yellow lines are as before, rather more distinct with their edges defined by a darker green line; they begin on the anterior edge of joint 2, but the dorsal one terminates at the beginning of the anal plate. There is a substigmatal ridge, above which is a band slightly darker green than the ground color, and below it a broad, distinctly greenish yellow band, which becomes more distinct as the stage advances.

Fourth stage.—Head as before, but the brown bands entirely absent; grass-green, minutely wrinkled and covered with very small brown dots; jaws and ocelli black, labrum white; width 1.6 mm. Body grass-green, with the four narrow yellow lines bordered obscurely with dark green, the space between them and down the sides as far as the lateral region thickly dotted with dark brown; along the subventral ridge is a broad greenish yellow band, shading off above into the ground color.

Fifth stage.—Head rounded triangular, bulging; clypeus small, grass-green, minutely dotted with black; labrum whitish, jaws black, ocelli black, ringed with white, five in number, the lower one remote from the others; width 2.4 mm. Body shaped as before, the anal plate very large (1.5 mm. long), projecting half its length beyond the last pair of abdominal feet, ridged by the subdorsal line, but concolorous with the body. Feet short, grass-green, tinged with yellow, the lines as before, namely, a double dorsal and single subdorsal line, narrow and rather obscure, yellowish, edged with green; the body is densely dotted with green, darker than the ground color, and there is a darker superstigmatal shade. Substigmatal band along the ridge pale yellow, distinct, dotted with green; spiracles small, and situated on the upperside of the stigmatal ridge, the spiracles on joints 2 and 12 being larger than the others, the one on joint 12 situated above the ridge.

Chrysalis.—Fastened by cremaster and a loop of silk to a stem or blade of grass, on which a mat of silk had been previously spun. Cylindrical, slightly flat ventrally, long and slender. Abdomen tapering, thickest at thorax; a tapering process like a horn projecting from the head in front; wing cases not projecting, the leg cases extending a little further along the abdomen than the wing cases; eyes prominent; cremaster broad, flat, excavated below and ridged subdorsally, much resembling the anal plate of the larva; width 3.5 mm.; length 19 mm.; length of "horn" 1.5 mm. The color of the living chrysalis was not ascertained, but is presumably green.

Food-plant.—Grass growing near the sea (species not determined). Another larva had its head 1.9 mm. wide in the fifth stage and died while preparing for another moult. It would thus have had six stages if it had lived. Larvæ from Santa Barbara County, Cal., on the grass very near the sea, where they were in reach of the salt spray; none found outside this region.

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Note on Trichobius dugesii Twns.

By C. H. T. Townsend.

It will perhaps be remembered by some that an article in the last volume of Entomological News (vol. ii, pp. 105–6) on a new hippoboscid from Mexico, which I described as *Trichobius* n. gen. *dugesii* n. sp., adopting the generic name *Trichobius*, which was apparently long ago proposed by Gervais, but of which no description, or reference to such, could be found.

Quite recently Dr. Alfredo Duges, who originally sent me the hippoboscid, very kindly communicated to me the following information which will throw much light on the original use of this generic term, and for which I am under many obligations to him.

Dr. Duges, who had labeled the specimen "*Trichobius* sp.," had searched in vain at different times during the last year for the description, or figure, which had led him to label it thus. Finally, while looking by chance in the "Atlas de Zoologie on collection de 100 planches . . . par M. Paul Gervais, Paris, 1844," he found a figure labeled "*Trichobie parasite*," and also the following reference in the text: "Trichobius parasiticus Gerv., de la Guiane. Petit insecte diptere de la famille des Mallophages de Nitzsch, trouve parasite sur une chauve-souris de la Guiane appelée Desmodus rufus. Il n'a pas encore été décrit."

Therefore, to Dr. Duges is due the credit for at last finding the source of this name. He says, in conclusion: "L'insecte ressemble beaucoup a celui que je vous ai envoye, et que vous avez décrit le premier."

THEY HAVE SLAVES WHO ATTEND TO ALL THEIR WANTS.—Certain warlike species of ants, as *Formica sanguinea* and *F. rufescens*, have subjugated a negro species, *F. fusca*. Here again ants, while behaving like men, have never allowed themselves the abuses of force to which men are accustomed. They never enslave adult ants; they seize upon the pupæ, bring up the young, treat them gently, and thus turn them into docile and zealous servants. The slave ants who have never known the city from which they sprang, do all the inferior work of the community with eager alacrity, care for the larvæ, carry their mistresses, feed them, barricade the approaches in case of siege, receive the victorious amazons with joy when they return from a fruitful expedition, and relieve them of the pupæ captured in the raid. They are so thoroughly on the side of their employers that it is believed they molest those who return from an expedition with empty mandibles. As for these slaves their labor is purely domestic. In some English ant hills the slaves never leave the nest. In Switzerland some go aphis hunting, a business scorned by the warrior ants. The warriors always seem to consider the black ants who serve them as their property, and though they may allow themselves to be carried by their slaves, these soldiers, in their turn, do not disdain to carry their servants for safety's sake when changing house, or in case of a siege, to drag them hastily down into the depths of the subterranean dwelling. This system of slavery has certainly lasted for many centuries in the ant world, but it has not existed always, as is attested by certain survivals, because in certain species, that pampered progenetrix, the queen, participates in the labors of the community exactly like a humble worker.

Prof. J. B. SMITH, New Brunswick, N. J., is engaged on a monographic revision of the Deltoid group of the Noctuidæ, and desires material from all parts of the country. He will name and return all material sent him for the privilege of retaining such specimens as may be needed for description or for completing the collection of the U. S. National Museum.

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PHILADELPHIA, PA., SEPTEMBER, 1892.

THE editor of this journal is an entomologist,—is thoroughly conversant with all the orders of insects, and is familiar with every genus and species, and can read proof and correct all the spelling in all orders without ever referring to a list. The printer can read any writing intuitively, and it makes no difference how bad it is, he always understands all the scientific terms. When A and O are made alike he can tell them apart, and also N and U. The editor is also familiar with all botanical, geological and geographical names, and need never look them up, and if sometimes he does, it is only necessary to leave his other work and walk to the library of the Academy and consult any special work he wishes. This only takes a few hours' time, and, as he has nothing else to do, it makes little difference. Then again, he is well paid for this, as out of his salary, as editor, he can save a few thousands a year. If a genus is mentioned which has been described in the "Entomologiske Meddelelser Udgione af Entomologisk Forening," of course our printer, who lives on the leaves of the "Encyclopedia Brittanica," reads it correctly, especially when the author of the paper writes it in Chinese (apparently), and the editor does not even look it up, being perfectly familiar with all known languages. If there are any mistakes in the journal due to the beautiful MS. writing of scientific names, even if they be new genera and species, the editor is to blame as he, knowing everything, should read it at sight. The editor is responsible for everything appearing in the journal, being thoroughly familiar with Thysanura, Dermaptera, Platyptera, Plectoptera, Thysanoptera, Mecoptera, Trichoptera, Siphonaptera, Aphaniptera, Strepsiptera, Rynchota, Corrodentia, Euplexoptera. If an individual writes or spells badly, or makes a mistake, he is in no sense responsible, as the editor can correct it without any trouble whatever.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

MR. W. F. KIRBY, in an article in the August number of the "Entomologist" entitled, "On the Identification of *Attacus atlas* Linn. and its allies, with remarks on some other species of the genus" says "*Attacus splendidus* Beauv. from St. Domingo may prove to be distinct (from *erycina* Shaw), when we receive a series from that island; its alleged occurrence in Texas is certainly an error."

EARLY CAPTURE OF *C. insolabilis.*—While running over lists giving dates of capture of Catocalæ, I find none earlier than July 1st for the latitude of central Ohio. June 22, 1892, I took the above-named *Catocala* resting on *Robinia pseudacacia* on the State University campus. This species is comparatively rare in this vicinity, Columbus, O., June 27th.—W. E. KELLICOTT.

Lophopteryx elegans.—In ENT. NEWS for April, page 87, Dr. McKnight records the capture of this moth in Franklin County, N. Y., and, in a footnote, notes the difference between his specimen and the description of *N. notaria* Hy. Edw., from Colorado. In his original description of the species Dr. Strecker says, under var. *grisea*, "The color of the head and primaries slate-gray instead of brownish." which would correspond with the description of *N. notaria*. Hence the synonymy of this species should be:

Lophopteryx elegans Strecker.
1884.—Streck., Proc. Acad. Nat. Sci. Phil. p. 285.
1891.—Smith, List Lep. No. 1273.
var. **grisea** Strecker.
1884.—Streck., Proc. Acad. Nat. Sci. Phil. p. 286.
notaria Edwards.
1885.—Hy. Edw., Ent. Amer. vol. i, p. 17.
1891.—Smith, List Lep. *pr. syn.*

HARRISON G. DYAR.

Bombus fervidus Fabr.—The males referred to this species by Cresson really belong to *B. borealis* Kby. Mr. Robertson suggests *A. elatus* Fabr. as a more nearly related male, ENT. NEWS i, 41. *B. perplexus* and *B. hudsonicus*. of which the females are unknown, may belong to *fervidus;* they belong to the section containing *B. vagans* Sm.—W. H. PATTON.

A FATAL MOSQUITO BITE (Bacillus of Anthrax communicated to a man by the insect).—New York, August 4th. A man has just died in Bellevue Hospital, according to the doctors, as a result of a mosquito bite. While the case is a very unusual one, it is not unprecedented, they say. The mosquito had absorbed the microbes of a dangerous disease, which he transmitted to the patient in the biting process. A fatal case of meningitis was developed as a result. The bacillus of Anthrax is the scientific name of the poisonous germ in this instance. The patient was Peter Kennedy, sixty-nine years old. It was about ten days ago when he was bitten on the left cheek by the mosquito. "The case is a very interesting one," said Dr. DeLaney, senior surgeon at Bellevue, to-day; "but it is not an isolated case of death resulting from the bite of a mosquito. Such cases are rare, but there are several clearly defined ones. "Anthrax is a disease of cattle. When we know that mosquitoes feed on dead horses there is nothing remarkable in their absorbing the disease germs of bacillus of Anthrax, which are germinated in the putrifying flesh. After the mosquito has absorbed the bacilli or poisonous ptomaines, it is not remarkable for them to be transmitted to the human system. The germs multiply rapidly and soon extend to nearly all parts of the body."—*Public Ledger*.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, **who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.**

NOTES ON ECONOMIC ENTOMOLOGY.

Prof. LAWRENCE BRUNER, in his report upon Insect Depredations in Nebraska for 1891, gives the following interesting account of a remedy for the cabbage butterfly (*Pieris rapæ*): "These insects were not especially numerous over the State during the year, but are referred to here simply because I wish to call attention to a reported 'new' remedy against them." To say the least, it is unique as well as simple, if it proves as effectual as is claimed for it. This remedy was brought to my notice about two weeks ago while at West Point, my old home, on business connected with my work for the Division of Entomology. The remedy is simply this: The cabbage plants are sprinkled with ordinary corn-meal while they are wet with dew or immediately after a rain, so that the meal will cling to the leaves at all points. My informant certainly had nice cabbages that were free from worms, and all he had done in the way of a preventive or remedy was to use this corn-meal as above directed or explained. He claimed that in a few days after sprinkling on the meal all the worms would be found dead and turned black, clinging to the leaves of the plants. Several cabbages that had purposely been left untreated were rather full of the caterpillars of different sizes. In order to test the corn-meal remedy for myself I treated these. On the 10th of October I received the cabbages thus treated by express, just as they were when cut from the roots. The accompanying letter reads as follows: "The worms seem to become torpid at first, at least inactive, and then seem to dry up. How the meal acts on the worms I cannot say. Cannot say whether they eat it by itself or whether it gets mixed up with the leaves they eat, or whether the meal that gets on them by adhering to them, acts like a poison on them. The meal does not seem to do any good unless there is a heavy dew on the cabbages, and it will adhere well. Perhaps they get killed by the meal getting on them while the dew is on them. But I think not." When the cabbages were received by me the worms were dead and partly dried up, just as they had been described to me. I do not know what to think of the matter, and give the facts as they appear here.

POTASSIUM IODIDE FOR BEE STINGS.—I have never seen this salt mentioned as a sting-cure, but having heard of its use by a bee keeper of forty years standing, whose verdict was "relief and cure instantaneous," I tried it. I have only used it in three cases, in all of which it was successful. A juvenile cousin aged seven, was stung on the hand, and the cure was so effective that the sting only "tickled" next day, as he expressed it, though he looked as if the tickling was too much for him at the time. In my own case the relief was instantaneous, and no swelling ensued the first time, when the remedy was applied at once, and very little the second time, when applied about five minutes after. The method of application is simply to hold a crystal of the iodide to the wound.—H. E. W. in the "British Bee Journal," June 23, 1892.

SOAPSUDS FOR CABBAGE LICE.—"Some time ago we undertook a line of experiments against them, using kerosene emulsion of different strengths. The result was that a weak emulsion had little or no effect, while a stronger one thoroughly applied killed the lice, but at the same time ruined the cabbage by giving it a flavor of kerosene which remained when it was brought on the table. After some further study a trial was made of strong soapsuds alone, and this proved highly efficacious, giving much better satisfaction than any other remedy for the pest ever used at the station. While water alone will roll off from the insects without wetting them, the addition of soap gives a compound that penetrates readily (Bull. No. 30, S. Dakota Agricultural Experiment Station)."

Calandra remotepunctata Gyll. it seems has not been noticed heretofore attacking grain, although two allied species, namely, *C. oryzæ* and *C. granaria*, are famous for their depredations. Recently my attention was called to a number of small weevils, which were found in freshly-made soup, and on enquiry being made, it was ascertained that the barley, obtained from a near-by grocery, contained numerous specimens of this insect. It is evident that this species has heretofore been confused with *C. oryzæ* by observers.—WM. J. FOX.

A CURCULIO REMEDY.—"The curculio flies," says a plum grower, "are our greatest enemy. But in Florida I learned of a curious method of saving the fruit, which the flies kill when it is very young. Just as the bloom is falling off, and when the plums are no larger than marrowfat peas, half a dozen small tin cans, empty tomato cans will do, two-thirds full of molasses and water, with a tablespoonful of vinegar added, must be hung from the branches of each tree. The curculio fly will be attracted by the mixture and eat it greedily, forgetting at the same time to sting the baby plums."—*New York Tribune.*

Entomological Literature.

AMERICAN NATURALIST, Philadelphia, May, 1892.—A spider enemy of *Oeneis semidea* S. W. Denton.

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* Contains new species other than North American. † Contains new genera.

JAHRESBERICHT DES VEREINS FUR NATURKUNDE ZU ZWICKAU IN SACHSEN. (1891), 1892.—The gall formations of German vascular plants; additions and corrections, Dr. D. v. Schlechtendal. On the oviposition of *Ixodes* females, id.

ATTI D. R. ACCADEMIA D. SCIENZE FISICHE E MATEMATICHE (2), iv, Naples, 1891.—Miscellanea Entomologica,* iii, A. Costa (Hymenoptera* and Blattidæ*), 1 pl.

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, 1891, 2, Berlin, March, 1892.—Remarks and Additions to the Catalogus Tenthredinidarum Europæ,* F. W. Konow. The Beetles collected by Dr. A. Stuebel in Hauran and Tulul-es-Safa in Syria in 1882, Dr. L. v. Heyden. *Letzneria lineata* Letzn. var. *Weisi* Heyden, id. Is it necessary to find a new generic name for *Platycerus caraboides* L. and its allies?, G. Albers. A new Lucanid from the Philippines, id. Second supplement to the Mylabridæ or Bruchidæ, F. Baudi. The palaearctic representatives of the Coleopterous genus *Zonitis* F.,* K. Escherich. A new *Limnobaris* from Dalmatia, J. Faust. To the characterization of the genus *Omotemnus* Chevr., id. The genera and species allied to the Rutelid genus *Singhala* Burm.,*† Dr. K. M. Heller, 1 pl. Further notes on *Dorcadion læve* Fald., id. Remarks and Additions to the Monograph of the palaearctic Cicindelidæ by himself and H. Roeschke, W. Horn. First contribution to the knowledge of the Cicindeletæ, id. On the African Cicindelid genus *Eurymorpha* Hope, Dr. G. Kraatz. On the genus *Stalagmosoma* Burm., id. *Chineosoma*, new Melolonthid genus, id. New species,* id. Contribution to the knowledge of some new exotic Coleoptera, A. F. Nonfried. List of the Lucanidæ described from 1875 to the end of 1889, id. New species,* Nonfried, C. Rost, A. Kuwert. New *Melanotus* from the palaearctic zone,* O. Schwarz. New Coccinellidæ,*† J. Weise. *Cryptocephalus* species from West Africa,* id. Contributions to the knowledge of the genus *Orina*, id.

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THE ENTOMOLOGIST'S RECORD, London, May 16, 1892.—The genus *Acronycta* and its allies, Dr. T. A. Chapman. The genus *Hepialus*, J. E. Robson. The British Coccinellidæ, G. A. Lewcock. Classification by structure of imago, E. Meyrick, J. W. Tutt.

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The Entomologist, London, June, 1892.—Color variation in the ova of *Biston hirtaria*, R. Adkin. A preliminary list of the insect fauna of Middlesex (cont.), T. D. A. Cockerell. The genus *Melanippe* (cont.), R. South. Spring Lepidoptera in Italy, H. Rowlands-Brown. Notes on the synonymy of noctuid moths (cont.), A. G. Butler.

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Zoe, San Francisco, April, 1892.—Notes on the Cicindelidæ observed in San Diego County, Cal., F. E. Blaisdell.

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LEPIDOPTERA.

Ebulea fumipennis Warren, Ann. Mag. N. H. (6), ix, p. 392, California. *E.? straminea*, p. 393, California. *Udea indistinctalis*, p. 394, Sierra Nevada. *Cybolomia extorris*, p. 395, western United States.

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Dasylophia puntagorda Slosson, Can. Ent. xxiv, p. 139, Florida.

Anthocharis flora Wright, Can. Ent. xxiv, p. 154, Washington.

Pronuba synthetica Riley, 3d Rep. Mo. Bot. Garden, p. 141, California. *Prodoxus pulverulentus*, p. 150, California. *P. Y-inversus*, p. 151, N. Mex. *P. reticulatus*, California. *P. coloradensis* Col., p. 152. *P. sordidus* p. 153, California.

COLEOPTERA.

Hoplia 1 sp., *Serica* 2 sp., *Lachnosterna* 4 sp., *Gymnetis* 1 sp., *Derobrachus* 1 sp., Honduras, *Psiloptera* 1 sp. Hayti, Nonfried, Deut. Ent. Zeit. 1891, pp. 257–276.

Botynella (n. gen. Coccinellidæ) Weise, Deut. Ent. Zeit. 1891, p. 286. *B. 5-punctata*, *4-punctata*, p. 287, Cuba. *Smilia* n. gen.; *S. Felschei*, p. 288, Florida.

Three genera, seventy species Phytophaga, Mexico, Central America, Jacoby; Biol. Cent.-Am. Coleop. vi, pp. 313–374.

Five species Coccinellidæ, Mexico, Central America; Gorham, Biol. Cent.-Am. Coleop. vii, pp. 161–168.

Callipogon Hauseri p. 20, *C. Friedlaenderi*, p. 22, Honduras; Nonfried, Berl. Ent. Zeit. xxxvii.

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Eighteen new genera, twenty-three new species Tachinidæ, Townsend, Trans. Am. Ent. Soc. xix, 13–15, United States.

Sarcodexia (n. gen. Dexiidæ) Townsend, Journ. Inst. Jam. i, p. 105. *S. sternodontes* p. 106, Jamaica.

Phora cimbicis Aldrich, Can. Ent. xxiv, p. 143, S. Dakota. *P. setacea*, p. 144, S. Dakota. *P. luggeri*, p. 145, Minn. *P. minuta*, p. 146, S. Dak.

ORTHOPTERA.

Acanthoprion (n. gen. Pseudophyllidæ) Pictet and Saussure, Icon. Sauter. vert., p. 26. *A. aztecum* p. 26, fig., Oudonga, Mex.

HYMENOPTERA.

Gorytes nevadensis Fox, Can. Ent. xxiv, p. 150, Nev. *G. atrifrons*, p. 151, Nevada. *G. mirandus*, p. 152, Nevada. *G. albosignatus*, p. 152, Montana. *G. rufocinctus*, p. 153, Washington.

NEUROPTERA.

Eight species Ephemeridæ, Arizona, Mexico, Central America; Eaton, Biol. Cent.-Am. Neurop. pp. 1-16.

HEMIPTERA.

Issida: *Ticida* n. gen. Uhler, Trans. Md. Acad. Sci. 1891, p. 143. *T. cingulata*, p. 144, California. *Belonocharis*, p. 145; *B. fumida*, p. 146, California.

Cicada cinctifera Uhler, l. c., 1892, p. 156, N. Mexico, California. *C. reticularis*, p. 157, Jamaica. *Tibicen cruentifera*, p. 161, Nevada. *T. Blaisdellii*, p. 163, California. *Odopoea cariboea*, p. 169, San Domingo. *O. domingensis*, p. 172, id. *Cicada sordidata*, p. 175, Florida. *C. reperta*, p. 177, Florida, North Carolina, Louisiana.

Henicocephalina: Uhler, l. c. p. 180, *Hymenodectes* n. gen.; *H. culicis* p. 181, United States; *Hymenocoris*, p. 181, *H. formicina*, p. 182, California. Capsidæ: *Hadronema pulverulenta*, p. 183, United States.

Doings of Societies.

ENTOMOLOGICAL SOCIETY OF WASHINGTON, Thursday, April 7, 1892. —Mr. George D. Bradford, of New York, was elected a corresponding member of the Society. The discussion of Dr. Gill's paper entitled, "The Larva of Insects as an Intercalated Stage," engendered at the preceding meeting of the Society, was taken up and participated in by Messrs. Stiles, Riley, Gill and Banks. Dr. Riley presented two papers, one "On certain peculiar Structures of Lepidoptera," and the other, "Descriptions of new Prodoxidæ." He spoke of various interesting structures of the Prodoxidæ, calling attention more particularly to the saw-like ovipositors, the maxillary tubercles, the cenchri-like spots on the thorax and certain radiate and chitinous bodies in the *receptaculum seminis*. The remarks were illustrated by large figures. He also spoke of the resemblance of *Pronuba synthetica* to certain saw-flies. Specimens of the insects described were exhibited. Prof. Riley's second paper was read by title only, and was presented for publication. The discussion of these papers was participated in by Messrs. Howard, Marlatt and Stiles. Prof. Riley also presented a paper on "Coleopterous Larvæ with Dorsal Appendages," in which he described the larva of various species of *Mordellistena* having rows of tnbercles on the back which facilitate moving more readily in the hollows of plants and the larger burrows of other insects. Discussed by Messrs. Smith and Schwarz. Mr. Doran read a paper entitled "On the Heat Produced by *Sylvanus cassiæ*," in which he recorded some observations which he had made on the amount of heat produced by these beetles in meal, but offered no definite explanation of the phenomenon. Discussed by Messrs. Marlatt, Riley, Austin and Schwarz.

Thursday, May 4, 1892.—Prof. H. E. Summers, of Champaign, Ill., was elected a corresponding member of the Society. Mr. Ashmead presented some notes on the genus *Enicocephalus* Westw. Biographical and critical notes were given, and the announcement was made of the discovery of representatives of this genus in material sent to Dr. Riley from St. Vincent, and announced also the discovery of a new species in Utah by Mr. Schwarz. The genus cannot be included in any of the present subfamilies in the Reduviidæ, to which it belongs, and the new subfamily Enicocephalinæ was erected for it. The new species was named *Enicocephalus schwarzii*. Discussed by Messrs. Schwarz, Riley, Ashmead, Hubbard and Heidemann. Mr. Malley read a paper on *Micromus hispidus*, pointing out some observations on the food and life-habits of this insect made in the South, where he found it feeding on Aphides. Discussed by Messrs. Ashmead and Riley. Mr. Howard presented a note on "The Hibernation of Carpenter Bees," showing that the males as well as the females winter over. Discussed by Messrs. Riley, Ashmead, Hubbard, Marlatt and Howard.

A paper by Dr. Bergroth, of Tammerfors, Finland, entitled "Notes on the Nearctic Aradidæ," was read by the Corresponding Secretary, to whom it had been sent for publication in the Proceeding of the Society.

Mr. F. M. Webster had forwarded a paper for presentation at this meeting of the Society on "The food-plants of the Lixi." The communication gave a view of the knowledge of the habits in this respect of this genus of beetles, both of foreign and American species. Discussed by Mr. Schwarz.

Mr. Hubbard presented a note on the larva of *Amphizoa*, and gave an interesting resumé of the disposition of this anomalous insect in systematic classification by various authors, together with the arguments adduced in support of the diverging views. He presented drawings of the larva and described its habits. The communication was discussed at some length by Mr. Schwarz, and also briefly by Messrs. Ashmead, Gill, Riley and others.

Mr. Masius gave his recent experience with the poisonous bite of *Benacus griseus*. In handling specimens of this insect he had received a severe sting on the hand which proved to be very painful. The pain and swelling increased for two or three days and became so troublesome that a physician was consulted. In five days the trouble had nearly disappeared, although at the time of the meeting the injured part was still sore. Discussed by Messrs. Howard, Ashmead, Riley and others.

C. L. Marlatt,
Rec. Secretary, pro. tem.

OBITUARY.

"Prof. Herman Carl Conrad Burmeister was born at Stralsund, Jan. 15, 1807, and died from the result of an accident at Buenos Ayres, May 2, 1892. Prof. Burmeister was the author of many valuable works on entomology. He was Professor of Natural History at Halle, having been elected to the chair in 1842. About 1850 failing health induced him to spend two years in Brazil. In 1861 he resigned his professorship at

Halle, and finally settled at Buenos Ayres, where he became director of the Museum of Natural History, a position he held to within a few days of his death. He continued to publish on Entomology, the insects of his new home affording ample materials for many valuable papers, both in publications of the National Museum and in European journals, and also a work on the physical features of the Argentine Republic with an atlas, which latter included two parts devoted to the Lepidoptera of the country. The Royal Society's catalogue of scientific papers enumerates no less than 164 articles (exclusive of separate works) from his pen down to 1883, and there have since been many more. He has been succeeded as Director of the Museum by Dr. C. Berg."

JUST after the MS. of our June number went to the printer we learned of the death of Dr. CARL AUGUST DOHRN, at Stettin, in the 86th year of his age. Dr. Dohrn was interested in Coleoptera, but he had a regard for insects of other orders, if only for the reason that it brought him in communication with the lovers of them. On the death at the comparatively early age of 39, of Dr. Wilhelm Schmidt, the first president of the Entomological Society of Stettin, which had been founded in 1839, C. A. Dohrn, who was then officiating as secretary of the society, was selected for the vacant post, and at the ensuing anniversary meeting, Nov. 5, 1843, was duly elected president, a position he continued to hold for upwards of forty years. The "Entomological Zeitung," which is the organ of the Stettin Society, was edited by Dr. Dohrn as long as he remained president, and contains copious articles by him, many of them descriptive of new species of beetles, and many relating to authors and their works and notes on travel. His own collection of Coleoptera was very extensive, almost unique in completeness of families and genera. Dr. Dohrn besides being an entomologist, was an accomplished linguist, litterateur and musician.

ENTOMOLOGICAL NEWS for June, was mailed May 27, 1892.

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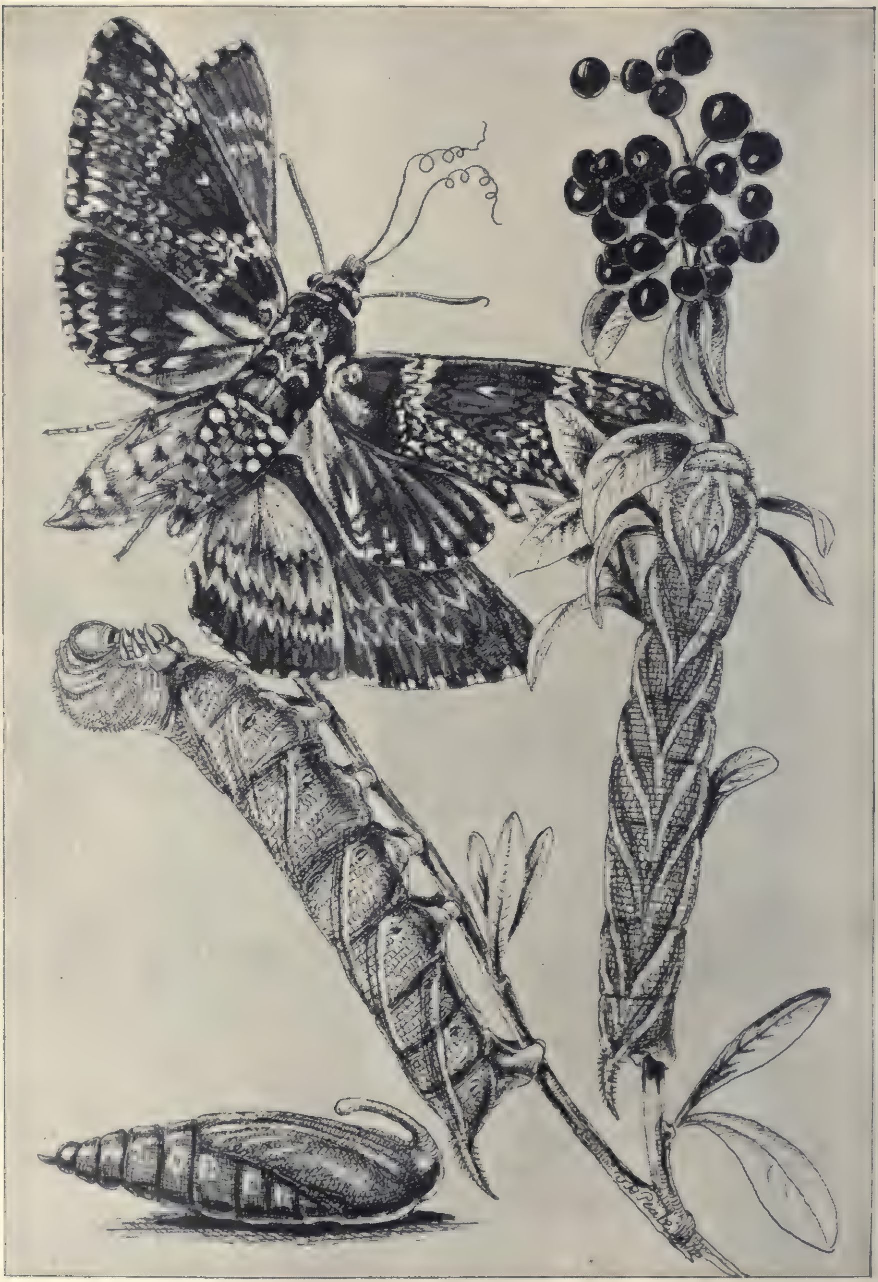

SPHINX RUSTICA.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. OCTOBER, 1892. No. 8.

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OUR plate this month represents the upper and under side of *Sphinx rustica* Fabr., with its larva and chrysalis. The original drawing was made by the late Titian R. Peale, the artist entomologist. The plate represents the objects reduced in size, the moth expanding five inches and the full-grown larvæ being about four and a half inches in length.

The Introduction of the Ailanthus Silk Worm Moth.

By EDW. J. NOLAN, M. D.

The attention of Dr. Thomas Stewardson, then Corresponding Secretary of the Academy of Natural Sciences, of Philadelphia, having been drawn, in 1860, by various notices published in the "Bulletin of the Society of Acclimation" and other French journals, to the recent introduction of the Ailanthus Silk Worm, *Attacus cynthia*, into France, he succeeded in obtaining from Mons. Guerin-Meneville specimens of the caterpillar, the fly, the cocoon and the silk in various stages of preparation.* In June of that year a number of eggs were also sent to him from Paris, but they were nearly all spoiled in consequence of being hatched on the voyage. Another lot sent a few days later reached him in good condition, and from these, with the assistance of a silk manufacturer in the neighborhood of Philadelphia, he succeeded in raising a few worms, which formed their cocoons in July.

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* Proc. Acad. Nat. Sci. Phila., 1861, p. 525.

Toward the middle of August the moths made their appearance, and the eggs laid by them hatched their worms from August 30th to September 3d. Some of these were placed by Dr. Stewardson on a tree in a private garden; some were set out on trees in the suburbs, and others were fed by him in a room at his house. Of the first lot, nearly all came to maturity; many of those placed in the country were destroyed by birds, and about forty cocoons were secured from those raised in the house. The success with the worms placed on the trees, except for the attacks of birds, was entirely satisfactory, and proved to the experimentors, apparently, the possibility of raising two crops of the insect during the proper season if reasonable care were taken to preserve them from injury.

On the appearance of the first crop of caterpillars in the Spring or early Summer of 1862, Dr. Stewardson was still sufficiently interested in them to supply them with food, but the work was becoming irksome. As Corresponding Secretary of the Academy, most of his leisure time was spent in the room in the northeast corner of the building, which was then situated at Broad and Sansom Streets, and now forms part of the Lafayette Hotel. My duties as Assistant Librarian placed me in constant communication with the doctor, and I became intensely interested in his caterpillars, their growth and their work. I was, therefore, delighted when the opportunity was given to me to take charge of them and look after their allowance of Ailanthus leaves. The supply was abundant, and fresh, crisp leaves were placed in glass jars in the Librarian's room as often as a change was necessary. The work was continued during the fall of 1862 and the Spring and Summer of 1863. In the Autumn of the latter year I began the study of chemistry with Dr. Robert E. Rogers, in the University of Pennsylvania, preparatory to matriculating as a student of medicine. My time was then so occupied that it was increasingly difficult to look after my pets, which, in spite of the fact that not all of the successive broods had been preserved, numbered at the time some hundreds and required constant attention to save them from starvation.

The yard of Dr. Roger's laboratory, at the back of the Medical Department of the University, which was then located on Ninth Street above Chestnut, where the Post-office now stands, adjoined the yard of a house formerly occupied, it is said, by the distinguished chemist, Dr. Hare. A large Ailanthus tree grew here, the branches of which extended over the premises of the laboratory. The more vigorous of the silk worms (so called) were selected, and, with the consent of Dr. Rogers and the occupant of the house referred to, were placed on the branches of this tree early in October, 1863, to the number of a couple of hundred. Here they were left to their fate, and, in truth, entirely forgotten in the press of other interests until the Winter of the following year (1864), when, on examining the tree, about forty cocoons were found, the petioles of the leaves on which they were spun being fastened to the otherwise naked branches by strands of silk in the way so characteristic of the Ailanthus moth. They were left here undisturbed, the survivors of the original colony of the year before. The tree was vigorous, was secluded from storms and visited by few birds. There is, therefore, no reason to doubt that a large number of flies had been distributed from this point during the preceding season, and it may, therefore, be considered the main centre from which this interesting and beautiful addition to our local fauna has proceeded, although some, of course, have descended from the out-door colonies placed by Dr. Stewardson himself.

The species was brought from China to Turn in 1857, and its cultivation in France was begun the following year. Dr. Stewardson hoped to benefit his fellow-citizens by bringing the insect to America, but its introduction does not seem to have produced much practical result, although the fly, with increasing frequency, forms an interesting feature of the local collector's cabinet, and may therefore be regarded as having come to stay.

LARVA HUNTING IN WINTER.

By Richard E. Kunze, M. D., New York.

With the swamps well frozen over, although light snowsqualls made it disagreeable enough, I hunted the larvæ of *Arzama obliquata* the first time this Winter, Feb. 7, 1892. They bore the stems of *Typha latifolia* or Cat-tail flag, and Great Reed Mace, so called. Inasmuch as they hibernate in the galleries bored out of the pithy part of the stalk of *Typha*, which line the shores of small creeks and rivers traversing the saltmeadows of the Atlantic sea-board, they are readily found. Dr. Kellicott, regarding hibernation of *obliquata*, states that the larva leaves the stem in the fall and crawls into the earth or old wood to hibernate until April or May, vide "American Naturalist," vol. xvii, p. 1172, 1883. On Long Island this larva is abundantly found hibernating in the stem of *Typha* throughout the whole Winter. I have taken larvæ out of galleries only a few inches above the frozen water line, and with thin sheets of ice formed by the moisture of the stem, completely surrounding the outstretched larva, which so filled up this gallery, that it seemed to be tightly wedged in place. Removing a part of the stem and carrying it in my pocket a short time, the larva soon showed great activity by moving up or down the narrow gallery at a lively speed, either backwards or forwards at pleasure. Have found them as high as two feet above water line, in the borings of thick stems, free from moisture, and all these stalks exhibit a number of openings as large as thickness of a pencil, so that they are easily singled out. I find more near where the fresh and brackish waters meet, than in the open salt meadows where *Typha* grows thickest. In fact, a few Cat-tails of very vigorous growth in a fresh-water swamp adjoining salt meadows, are preferable to an acre of the former. In an hour's time I found seven larvæ, and on examining some *Typha* stems I brought home for another purpose I found three more, making ten in all, of which one represented another species.

Perhaps it is not superfluous to state that the larva is mature before hibernating and pupates in the stem of *Typha*, if undisturbed, early in Spring. I found lots of empty pupa cases in stems more than a year old. The woody fibre of these withstands the effect of elements fully two years. In hunting larvæ I have often split open a two-year old stem in a mistake, my benumbed fingers not readily detecting the softer texture of the latter from the more firm and newer growth.

Sometimes more than one larva is found in a stem, and I think the flower-bearing stalk being strongest, yields more than the leaf-bearing kind. In the stronger stems I found larvæ three feet above the ground. I place the collected larvæ in wide-mouth bottles containing sphagnum, leaving those which have not been disturbed in their respective stems. After pupation, which some do in the moss and others in their galleries, the imago has an opportunity to crawl upon the stem and develop after emerging. I place the larvæ in a cold hallway or out-house, during Winter. Have collected such from December up to late in April.

Dr. Riley states in "American Naturalist," vol. xvii, p. 1169, that *A. obliquata* also bores the stems of *Sagittaria* (Arrow-head) and *Pontederia* (Pickerel Weed), whereas Dr. Kellicott, in the same work, mentions another food-plant, *Sparganium* (Bur Reed), but it is bored much less so than *Typha*.

This larva, and other species of such borers, could not well hibernate in either *Sagittaria* or *Pontederia*, the stems of which are too succulent and perish with the first killing frosts of Winter.

(To be continued.)

Description of a new Solitary Wasp.

By Wm. J. Fox, Phila., Pa.

Odynerus (*Odynerus*) **Aldrichi.**

♀.—Clypeus with coarse, separated punctures, with longitudinal folds or striæ, which are more obvious when viewed from certain positions, bidentate anteriorly and with a rather strong depression just behind the teeth; head coarsely and closely punctured, the punctures becoming sparse on the cheeks; first joint of flagellum equal in length to the two following united; thorax punctured like the head; scutellum strongly impressed medially; postscutellum when viewed from the front, crenulated; metathorax strongly depressed, with a strong, somewhat triangular excavation at base, rugose towards the sides, the metapleuræ with irregular, oblique striations; when viewed from behind the lateral margins of the metathorax are seen to be emarginate below the middle; hind coxæ armed with a strong tooth near the base on outer edge; first abdominal segment above with coarse, separated punctures, those on the second much finer, on the third segment the basal half is microscopically punctured, while on the apical portion it has coarse, close, shallow punctures; beneath the basal portions of the segments are finely punctured, the apical portion strongly so; black; two transverse, curved spots on clypeus at base, two minute dots behind antennæ, inner eye orbits on lower portion, large spot at top of cheeks, prothorax above, anteriorly, tegulæ, except outer margin and a spot near base which are brown, spot on mesopleuræ above, posterior margins of scutellum and postscutellum, the marks narrowed on each side, all bright yellow; a large spot on each side of first abdominal segment also yellow, connected by a greenish white band on apical margin of the segment, apical margins of dorsal segments 2–5 and a large spot on apical margins of ventral segments 2, 3 and 4, laterally, also greenish white; scape beneath and the legs, except coxæ, trochanters and base of femora, rufo-testaceous; wings subhyaline, apical margins fuscous; nervures and stigma deep black; the median cell of fore wings with a ferruginous stain, the costal and median nervures beneath colored like the legs.

♂.—Clypeus deeply and roundly emarginate anteriorly, with fine, sparse punctures; first joint of flagellum scarcely as long as the two following united; clypeus entirely, scape beneath, and coxæ beneath yellow; legs with a yellowish tinge; flagellum beneath testaceous.

Var. Greater part of legs and hind margins of the abdominal segments yellow.

Brookings, S. Dakota (J. A. Aldrich); Colorado (coll. Amer. Ent. Soc.). The color of the legs will distinguish this species. Appears to occur abundantly from May 30th to June 10th, as Mr. Aldrich sent me about thirty specimens.

ELEMENTARY ENTOMOLOGY.

LEPIDOPTERA-HETEROCERA (Moths).

By Prof. John B. Smith, New Brunswick, N. J.

The little family Heterogynidæ belongs, in most respects, to the Zygænid series. In it the primaries have two, the secondaries three internal veins, as in the Pyromorphidæ. It differs, however, in having a distinct, free costal vein to the secondaries, while the absence of this vein is one of the distinctive features in the immediately preceding group of families. It is, perhaps, questionable whether we have any true Heterogynidæ in North America.

Following these, comes a small series of what may be termed Arctiid families. All agree in having only a single internal vein to the primaries and two in the secondaries. The costal vein of the primaries arises from the subcostal about one-third the distance from base. In one instance, *Euerythra*, it is altogether wanting. Vein 5, in both primaries and secondaries, belongs to the median series, and arises close to vein 4. The larvæ, in the majority of instances, are hairy caterpillars, usually transforming in a loose cocoon, in the manufacture of which the hairy clothing is used to eke out the scanty supply of silk. To facilitate this, the hair is quite commonly barbed or branched, so that it felts easily.

The Nycteolidæ are small moths that are usually puzzles to the amateur. They have the wing form of Tortricids, and much of their habital appearance, but have the venation above described. Unlike all the other Arctids, however, the internal vein of the primaries is forked at the base. That is to say, two parallel veins start at the base and unite a short distance beyond into the normal single vein. The ocelli are present. We have as yet but two genera with three species described from our fauna, and of these *Sarrothripa lintneriana* is the common eastern species.

The Pericopidæ are very uncertainly separated from the Arctiidæ. In venation they differ chiefly in that veins 3 and 4, and 7 and 8, of the secondaries are stalked; that is, a single vein only starts at the point of origin, and this divides on its way to the outer margin. The species are often rather frail and long-winged, and have been compared to the Heliconinæ of the diurnal Lepidoptera. Some of the species, American and foreign, which were formerly referred here, have been of late proved to be Geometridæ!

The Lithosiidæ differ from the Arctiidæ by the absence of ocelli, but agree with them in almost all other structural characters. In the typical genus the primaries are narrow and elongate, while the secondaries are broad and proportionately large, but in our American forms we have all gradations from this to a really geometriform wing. It may not be amiss to say that here, too, an interesting amount of uncertainty exists—whether some species are not Geometridæ rather than Lithosiidæ. Some of the species resemble Noctuidæ, and others are sometimes mistaken for micro-lepidoptera. A reference to the venation will, in most cases, settle the question at once. There is a tendency in this family towards a loss of some of the veins of the secondaries, indicating an approach to the Syntomidæ, already treated.

The Arctiidæ differ from the Lithosiidæ by the presence of ocelli. They are larger, as a rule, but sometimes with very similar wing form. Indeed, almost any desired variety of wing form can be found in this family, which, by its bright and often strongly contrasting colors, is one of the most attractive to collectors. Two subfamilies are indicated in the American fauna: the Cydosiinæ, which have a roughened or tuberculate front, and the Arctiinæ, in which the head is normal, not rough or tuberculate. In many of the species in this family there is a tendency to a reduction in the spurs of the hind tibiæ, and frequently one of the pairs is wanting.

In volumes xxi and xxii of the "Canadian Entomologist," will be found an annotated catalogue of the Arctiidæ, in which the genera are described in some detail and the venation of the leading types is figured, and to this I would refer the student for further information concerning this family.

STUDIES IN NORTH AMERICAN MEMBRACIDÆ, II.

By F. W. Goding, M.D., Ph.D.

PUBLILIA Stal.

Publilia bicinctura n. sp.—Similar to *modestus* Uhler; more depressed and slender, with two diagonal white bands. Head broadly oval, unequal, blackish brown, with three smooth, slightly elevated, light spots, arranged in a triangle; eyes black; prothorax light green, with two whitish bands, the first originating near middle of inferior border passes diagonally forward and upward, crossing the median carina in the sulcus, the second starting about midway between the first and the apex parallel to it; both are narrowly bordered with dark brown, and several longitudinal lines of the same color mark the surface posterior to the first band; apex more attenuated than in its congeners; base of prothorax with a short, impressed, black line above each eye; tegmina clear, veins white; below piceous, upper surface of femora black. Legs otherwise light brown. Abdomen dark brown. Length 5 mm.

Described from two males and two females. Collected by Prof. Gillette in June and August, on *Glycyrrhiza lepidota.*

Hab.—Fort Collins, Colorado.

One example had the bands obsolete, and two had the dorsum largely ferruginous (types in coll. F. W. G.).

STICTOCEPHALA Stal.

Stictocephala gillettei Godg. ♂.—Differs from ♀ as follows: impressed lateral line extends from base of tegmina to apex of thorax; lateral carinæ meet at about the middle, and apex is less curved. Head grass-green, surface unequal; prothorax clouded with yellow; tegmina transparent with a tinge of green, and densely punctured; chest very pale green; femora yellow, covered with hairs; tibiæ marked with brown, tarsi light brown.

Collected by Prof. Gillette at Trinidad, Col., May 14, 1892.

HELIRIA Stal.

Heliria scalaris Fm. ♂.—Castaneous, speckled with yellow. Head yellow, mottled with castaneous, very broad between eyes, which are black, ocelli nearer each other than the eyes; prothorax castaneous, mottled with yellow, anteriorly with the yellow predominating, densely punctured; median carina prominent, mostly shining black; crest compressed vertically just behind middle; above each eye a black impressed dot; a yellow stripe along posterior edge of crest half way to apex; sides posteriorly with several longitudinal carinæ; about middle of lateral borders a dark brown spot surrounded by a yellow ring; lateral angles produced; tegmina vitreous, punctured, veins piceous, base with piceous spot and posterior fourth nearly black; chest yellow, marked with piceous, hairy. Abdomen black, posterior edges of segments yellow, last segment brown. Legs testaceous, mottled with brown, tibiæ triquetrous and spined, tips of tarsi piceous. Length 8 mm.; width between lateral angles 4 mm.; altitude 5 mm.

Hab.—Fort Collins, Col. Described from a ♂ taken by Prof. Gillette, July 4, 1892.

STICTOPELTA Stal.

Stictopelta marmorata ♀, n. sp.—Form similar to *nova;* castaneous, mottled with yellow, the latter color predominating in anterior part. Head yellow, nearly quadrangular, a semi-circular line around apex, a spot contiguous to each ocellus, and a spot between these and each eye, dark brown; eyes very dark green, surrounded by a yellow ring; prothorax castaneous, mottled with yellow, darkest posteriorly; at the base, above each eye, is a shining, irregular, impressed scar; lateral borders white, this color extending from above base of tegmina nearly to apex, the tip of which is black; punctured lightly throughout; tegmina vitreous yellow, veins of corium piceous, apex lightly clouded; chest and abdomen yellow, ovipositor castaneous; femora yellow, tibiæ same color, outer surface brown, except the anterior pair; tarsi yellow, tips darker. Length 9 mm.; width 4 mm.; altitude 3 mm.

Described from one ♀ collected by Prof. C. H. T. Townsend.

Hab.—New Mexico.

Subfamily CENTROTINÆ Stal.

Centrodontus n. gen.—Head broad, short, almost spindle shaped, eyes large, globular; prothorax superiorly developed into a rounded gibbosity, lateral angles with a rounded tubercle, but destitute of horns; median carina percurrent; posterior prothoracic process extends beyond scutellum, which is bidentate at extremity, the process lying between these teeth; it is straight, long, narrow, sides nearly parallel, sometimes sinuate superiorly. Abdomen long, spindle shaped, reaching nearly to apex of tegmina; tegmina opaque, convex externally, when closed forming a concavity enclosing the abdomen; veins very prominent, the usual venation being interfered with by numerous irregular venules cutting up the regular cells; claws gradually attenuated to apex. Wings with three apical cells. Legs simple, posterior trochanters unarmed, feet simple.

Type of genus *Gargara atlas* Godg., described in ENT. NEWS, vol. iii, p. 110.

I am not acquainted with Signoret's *Gargara variegata* from Calabar, but judging from the description it may belong to this genus.

NOTES ON THE ENTOMOLOGY OF COLORADO—I.

By T. D. A. Cockerell.

Notwithstanding the large amount of descriptive matter in our literature, relating to the insects of Colorado, the information available about the distribution of the species is very slight. Unless one has visited the State, I suppose it must be difficult to realize the enormous differences of country and climate, and correspondingly different faunæ, comprised within the boundaries of Colorado. Until recently, at least, it seems to have been the general opinion that to cite "Colorado" as the locality of a new species was enough, and so lately as May of the present year I find a new insect described with no better indication of the habitat, although it was received from Prof. Gillette, who would presumably have given the proper details for the asking. In the following notes I give, indeed, but scanty information about a few localities in the State; but such as it is, it may serve to indicate some facts which could not be gleaned from what has hitherto been published. I wish that others could be persuaded to follow the same lines of investigation, so as to substitute a fairly complete account for the present fragmentary records. For the identification of the insects referred to in this and future notes of the series, I have been greatly indebted to Mr. Ashmead, Dr. J. Hamilton, Prof. C. V. Riley, Mr. Hy. Edwards, Mr. W. H. Edwards, Dr. Horn and the U. S. National Museum. Unless a statement is made to the contrary, it is always to be understood that the imago is referred to, as is usual. In addition to the locality and the date, I have found it an excellent plan, especially if one has no aneroid, to note some of those forms of animal or plant life in the locality, which indicate the climate and altitude. Sometimes trees, etc., occur on mountain-sides in singularly well-defined zones; thus coming down from the head of Surface Creek to the Gunnison River, in Delta County, on the 5th of October, 1887, I noted the following zones:

(1) Zone of Spruce (*Picea engelmanni* Parry).
(2) " Quaking Asp (*Populus tremuloides* Michx.).
(3) " Oak Scrub (*Quercus undulata* Torr.).
(4) " Cedars (*Juniperus virginiana* L.) and piñons (*Pinus edulis*).
(5) " Sage brush (*Artemisia*).
(6) " Greasewood (*Chenopodiaceæ*).

I have nowhere else found the zones quite so well marked, or so easy to observe, but throughout the mountains they are to be seen more or less clearly. In the fall, when the Spruce is green, the Quaking Asp yellow, and the Oak Scrub red, very beautiful effects are produced. In Custer County, I have found it convenient to divide the fauna as follows :

(1) High-Alpine fauna, living from 10,000 feet upwards.
(2) Mid-Alpine " " " " " down to 6500.
(3) Sub-Alpine " " " 6,500 " " the foothills.

These three faunæ, as will be explained in detail in a paper now preparing, are very different from one another. The terms may be used also when referring to other counties, but it must always be remembered that even between north and south Colorado there is a difference in the faunæ of a given altitude. Therefore, the tree-zones are in some ways more useful than a statement of the altitude. For detailed work, I divided Colorado into 78 counties and vice-counties, included in nine river basins, of which four are on the Atlantic, and five on the Pacific slope. Grand R. basin, on the Pacific slope, includes seventeen of these divisions, viz.: Saguache, N. W.; Hinsdale, N.; San Juan, N.; Ouray; Montrose, E.; Gunnison, S. (S. of Gunnison R., Taylor R., Willow Creek); Gunnison, N.; Mesa, N. E.; Delta; Pitkin; Eagle, S. (S. of Eagle R.); Eagle, N.; Summit, N. (N. of Little Snake R., Dillon, Cañon Creek); Summit, S.; Garfield, S.; Routt, S. E.; Grand, S.

SAGUACHE, N. W.

This is a triangular piece of country N. W. of the Cochetopa Hills, upper mid-alpine in character. In the Summit Park region, by the head of a tributary of Los Pinos Creek, *Populus tremuloides* and *Achillea millefolium* were noted. This was on October 13th, and the only insect recorded was a red *Chironomus* larva, similar to those found in England. The next day there was a snow-storm.

MONTROSE, E.

Contains low sub-alpine and mid-alpine districts, with great differences of climate. In 1887 I traveled from the Gunnison River *via* Montrose to Cimarron. The Uncompaghre Valley, north of Montrose, is a great barren plain, consisting of dried mud, baked and cracked in the sun; with scattered and solitary Chenopodiaceæ and such plants, and stunted cacti. On October 6th a strong breeze was blowing, and the scanty vegetation was covered with dust. The heat was very great, so that one looked with some longing at the perpetual snow on the distant mountains. Two days after, traveling up Cedar Creek from Montrose, rain came on, and the abundant sticky mud of the roads made it nearly impossible to proceed. Although the temperature was not down to freezing point, I do not think I ever suffered so much from the cold as on this journey. Early next morning numbers of robins (*Merula migratoria*) passed on their migration to warmer regions. Below Montrose, *Malvastrum coccineum* was noted. This malvaceous plant is easily recognized, and is useful for indicating the kind of locality. It occurs on dry, open ground, up to about 8000 feet, or sometimes rather higher, belonging to the sub-alpine and lower, mid-alpine regions. On Cedar Creek, October 9th, species of *Colias*, *Coccinella*, *Vespa* and *Lucilia* were noted.

At Cimarron (6906 feet) I found a *Geophilus*, and also a new ichneumonid, since described by Mr. Ashmead as *Thersilochus montanus*. In the same neighborhood three beetles were obtained, afterwards identified as *Harpalus amputatus* Say, *Pterostichus longulus* Lec. and *Amara remotestriata* Dej. These three are all found also in the mid-alpine zone of Custer County.

GUNNISON, S.

Mid-Alpine, with some pretty and little-settled country. There is a pine wood between Allen and Powderhorn, which is rather unusual, firs being the dominant conifers in Colorado. Judging from the distribution of the two genera *Abies* and *Pinus*, it seems as if the former were ousting the latter; so we get, as in Custer County, *Pinus ponderosa* chiefly fringing the Spruce forests at their lower limit; and at and near timber-line a high-alpine *Pinus* of a different species, maintaining a somewhat precarious existence. When the pines were dominant, they seem to have gone a little higher than the firs, and hence the finding of logs and roots a little *above* the present timber-line. If this view is correct, it cannot be doubted that these changes have affected the insect fauna. The insects taken or noticed were *Bembidium indistinctum* Dej. and *Lucilia* sp. by Little Blue Creek; *Vespa* sp. on the East Twin Mesa; and *Pterostichus luczotti* Dej., the locality not exactly noted. A *Geophilus* was also found.

It will very likely be objected that the above notes are hardly entomological at all, and I send the paper with some fear lest it should go into the editorial waste-paper basket on that account. But my defence is this: though we may interest ourselves in beetles or moths, or even in a single genus only, nature is a whole, of which every part depends, more or less, on every other. In Entomology, the study of *environments* is scarcely begun in any serious fashion, but yet we may well believe that it will lead to a better understanding of the *reason* of things than almost any other method of research. Future papers of this series will deal with other counties in which more insects were obtained.

ENTOMOLOGICAL NEWS.

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PHILADELPHIA, PA., OCTOBER, 1892.

WITH this number of the NEWS we have inaugurated a new department; that of Economic Entomology. We were fortunate in securing the services of Prof. John B. Smith to take charge of it as editor, and the NEWS and its subscribers are to be congratulated. Prof. Smith, as late curator of the Department of Entomology of the United States National Museum and at present State Entomologist of New Jersey, has had a ripe experience in this branch of Entomology, and we confidently predict this, our new departure, will become one of the most interesting features of the journal. Economic Entomology is growing in importance every day, and no one can fail to see its great usefulness, and while much has already been accomplished, we predict a great future for this part of our study. Prof. Smith, in his preliminary remarks, maps out the scope of the department, and what will follow each month cannot fail to be interesting, instructive and useful to all our readers, but more especially those in any way interested in agriculture or horticulture.

An Atchinson (Kan.) woman has brought up her chickens on the bugs collected from the machinery at the electric light station every morning.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. **JOHN B. SMITH**, Sc. D., New Brunswick, N. J.

It is the intention of the editor of this department to keep the readers of the News informed of the main lines of work done and results obtained by the economic entomologists, as evidenced in the Bulletins and Reports received. It is also desired to make it a means for the communication of new results attained by workers, which can be given here in brief, in advance of the more detailed accounts in the Experiment Station publications. The object is to give results or abstracts, rather than detailed accounts of experiments, and co-operation is invited, to aid in making this feature not the least valuable part of the News.

The "Horn Fly," *Hæmatobia serrata*, is still spreading, and has covered a vast new territory during the past year. It now extends from Florida to Canada, and westward nearly to the Mississippi, causing alarm wherever it makes its appearance. There are none of the sensational accounts so common when it first appeared, but the facts are sufficiently bad. One curious, and somewhat encouraging fact is, that in New Jersey, which was one of the first, if not the first State invaded, the pest has very decidedly decreased in numbers, and is very seldom complained of. It seems now no more abundant than the common native cow-fly, *Stomoxys calcitrans*, and, indeed, in some of the localities most infested two years ago, is now scarcely noticed. There has also been a decided change in habit in New Jersey. That peculiarity which induced the common name "Horn Fly," has almost entirely disappeared. Nowhere did I observe any clustering about the base of the horns during the present season, and none of the farmers have noticed it. They now frequent the flank or the shoulder in company with *Stomoxys*. As to remedies, little that is new has been discovered. Spraying the cattle with the kerosene emulsion has proved very successful in some hands, while fish oil with an admixture of carbolic acid is a favorite with others. Spreading the droppings in the pasture every two or three days makes a cheap and certain way of preventing the larvæ from attaining maturity. In the stable, the droppings may be mixed with land plaster to absorb the liquid and make the mass too dry to serve as food for the maggots.

Among the imported pests, *Zeuzera pyrina* is causing great injury in Central Park, New York. Mr. E. B. Southwick exhibited, at Rochester, some very interesting specimens of the injury caused by this larva: trunks and branches of considerable size being completely girdled. Like so many introduced species, it is far more injurious in its new home, than it ever was in its own country, and the very great number of species of trees and shrubs attacked, makes it particularly obnoxious in a large park which depends so much for its beauty and attractiveness upon the variety of vegetation contained. No very effective means of combating this insect have been discovered as yet.

As an example of a slowly spreading insect, *Crioceris 12-punctatus* L. may be cited. It has been known from the vicinity of Baltimore for many years, but has been found for the first time in New Jersey during the present season. Curiously enough, I found it on volunteer asparagus only, though cultivated beds were just across the fence. It has never been as troublesome as its congener, *C. asparagi*, and is fully as pretty a beetle. This *C. asparagi*, by-the-bye, is fairly well controlled now-a-days by growers in New Jersey; they either cut all the shoots in the bed, forcing the beetles to oviposit on the heads which are sent to market, or the poorer shoots are allowed to grow until they become covered with eggs. They are then cut and destroyed, and in this easy manner the first brood of larva is reduced to a minimum. If farmers could be induced to destroy the volunteer asparagus growing along the road and in fence corners, the practice would be still more effective, but as it is, hundreds of eggs are allowed to develop in these neglected places and the new beetles find their way to the cultivated plants after the cutting season is over.

Farm practice to prevent insect injury is bound to become a subject of great importance in the near future. Poisons and insecticides generally, will always have a large field of usefulness, but we can often control insects easily and cheaply by taking advantage of some peculiarity of habit. I have called attention to some of the possibilities of this method in Bulletin No. 85 of the New Jersey Station, and further observations bring new applications of the principle. In Bulletin No. 21 of the Mississippi Experiment Station, Mr. H. E. Weed gives an account of the insects injurious to cabbage. All of the species treated are well known, and have been frequently written up, but the new and valuable facts are in the account of the "Harlequin Cabbage Bug," *Murgantia histrionica*. Mr. Weed has found that the hibernating bugs are especially fond of radish and mustard plants, and that they feed and oviposit on these in preference to the cabbage. By planting trap rows of mustard or radish in the cabbage fields the bugs are induced to congregate on them, and there they can be easily collected and destroyed, or kerosene can be used as a spray, thus destroying the insects. Kerosene when diluted so as to be safe for use on cabbage, is ineffective as against the adult bugs and their destruction on cabbage is thus out of question. The mustard or radish would be planted merely to be sacrificed in destroying the insects. In New Jersey the wild Cruciferæ are an important element in the life of our most serious cabbage pest—*Pieris rapæ*. It is upon these that the few spring butterflies lay their eggs, and upon these the larvæ develop before the cabbages are in condition to afford food for them. A conscientious early destruction of cruciferous weeds, would very materially lessen injury from "cabbage worms" later in the season.

Dr. E. W. Doran has a Bulletin on "Wheat Insects," No. 16 of the Maryland Agricultural Experiment Station. The insects treated are those that affect the stored grain, and the most important of them is the "Angumois Grain Moth," *Gelechia cereallela* Oliv. Dr. Doran made a number of experiments for the purpose of determining the degree of heat and length of the time necessary to destroy the insects, but obtained negative results only. Unfortunately, he does not seem to have tried duplicating the results obtained by Mr. F. M. Webster, which are referred to in the account. Naphthaline has proved satisfactory on experiment, and Dr. Doran recommends its use in bins of stored grain as a repellant. He says it also kills the moths in an air-tight vessel, but says nothing of its effects on the larvæ. A rather curious and interesting note is found in the account of the "Red Grain Beetle," *Silvanus cassiæ*. Not only were the insects excessively numerous in a bin of wheat middlings, but in that part in which they were most numerous the temperature of the material rose at one time to 95° F., a difference of 53° as compared with the temperature of the room and of other less infested parts of the grain.

Concerning the Carbon disulphide, a little experience of my own may prove of some interest. In the little patch of sod constituting my "front yard," a colony of large black ants had established themselves, and this year their nest or hill became too conspicuous to suit my views. The disc of loose soil was nearly two feet in diameter, while openings were found six inches to each side of that, making the space covered about three feet in diameter. On this space the grass began to die, and the great number of insects became annoying. To get rid of them I used a one pound bottle of Carbon disulphide, simply pouring it into the holes and then treading down the soil over the space occupied. I expected that, as a matter of course, the grass roots would be destroyed by this treatment, and that I would be compelled to re-sod. As against the ants, the substance was completely effective, no further trace of them being observed; but instead of losing my grass, it took a new start, growing rank and vigorous, and, while all around it was dry and parched by drought, this little patch remained bright and green, growing vigorously! It may be that the liquid sank into the loose soil so rapidly and deeply that the grass roots were not affected, and that the looseness of the soil proved an advantage to the grass on it, enabling it to better resist the dry weather; but whatever the explanation, such were the facts.

In Volume I, No. 1, p. 39, of the Kansas University Quarterly, Mr. V. L. Kellogg describes the early stages of *Melitara dentata* Grt. bred from the leaves of the prickly pear cactus, *Opuntia missouriensis* in Colorado, and finds the habits of the species very like those of *M. prodenialis* Wlk. described by Dr. Riley and myself. Among other matters he gives a description of the egg, which is said to be creamy-white in color; but he does not say where the eggs were found, nor how they are laid. Mr. H. G. Hubbard, in the course of a conversation in which the eastern species was mentioned, informed me that he has observed the eggs, and that they are set, one on top of the other, in such a way as to resemble exactly one of the spines or prickles of the plant. This is quite a remarkable instance of mimicry; the more as it is not the egg itself which is mimetic, but rather the arrangement by the parent moth, in which the individual appearance of the ova is lost in the impression created by the mass. It is quite probable that the western species will be found to have similar habits.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

Dr. R. OTTOLENGUI, of New York, had a very successful collecting trip to Mt. Washington, N. H.

Mrs. A. T. SLOSSON has, as usual, been collecting among the Northern Hills, at Franconia Notch, N. H.

Mr. PHILIP LAURENT and Dr. Henry Skinner spent two weeks collecting in Mitchell County, North Carolina.

Mr. I. C. MARTINDALE has recently been elected a member of the Entomological Society "Iris" in Dresden.

Mr. FRANK M. JONES, of Wilmington, Del., spent two weeks collecting in Richmond County, southern North Carolina.

WE have learned that Dr. H. Strecker, of Reading, has entirely rearranged his immense collection of Lepidoptera, and that it is now something magnificent.

Mr. PHILIP NELL and Mr. C. W. Johnson have been trying to make insects scarce in southern New Jersey. Mr. Nell discovered a very interesting locality for *Pamphilus leonardus* at Atco, where the species was found in abundance.

HAVING read the article in the April number of the NEWS on peach yellows and rosette, by W. H. Patton, I would like to ask if this gentleman is correct, why is the government at Washington spending so much time and money in trying to find the *cause* of peach yellows, as well as a remedy? It seems to me the above article should be corrected in order to avoid mistakes, or else the government ought to be notified of this great discovery.—G. R. PILATE, Griffin, Ga.

SOME time ago I read an account of the different classes of insects representing the different kind of governments, viz.: Ants representing Democratic or Republican; Bees, the Monarchial; and Butterflies the Anarchistic, etc., with the different explanations. Could you please let me know or publish where I could have seen it?—EUGENE R. FISCHER, No. 2707 Winnebago St., St. Louis, Mo.

WE know of no such article. If any reader of the NEWS can supply the information Mr. Fischer desires, no doubt he would be grateful.—ED.

ON July 3, 1892, the Entomological Society of Belgium tendered a banquet to the veteran entomologist, the Baron Edmond de Selys-Longchamps, on the occasion of the fiftieth anniversary of the publication of "La Faune de la Belgique," to which M. de Selys had contributed. M. Giron delivered a congratulatory address to the honored guest, referring to the chief events, scientific and political, of the latter's life. Baron de Selys is one of the oldest of living entomologists, having been born in Paris, May 25, 1813. The long and continuous list of his entomological publications begins with 1831, and extends into the present year.

THE steamer "Kite" (September 19th) is on its way from Greenland to Philadelphia, bringing the members of the Peary Expedition and also the Academy Relief Expedition. It is stated that rich collections have been made of the flora, fauna and ethnology of North Greenland. It made almost a complete collection of water and land mammals, both in skins and skeletons; a large variety of birds and submarine animal life, a rare collection of flowering plants, mosses, lichens and insects, and of ethnological specimens. These collections become the property of the Academy of Natural Sciences of Philadelphia, and the Entomological Section will come into possession of the insects.

IN the preface to the just published first volume of his Catalogue of Lepidoptera-Heterocera, referred to in our Literature Department, Mr. W. F. Kirby says: "The MS. of the whole of the remainder of the present work has been in an advanced state for some years, and it is proposed to issue it as follows: 'Vol. I. Sphinges and Bombyces (now published); Vol. II. Noctuæ; Vol. III. Geometræ and Pyrales; Vol. IV. Micro-Lepidoptera; Vol. V. Appendix, to date, and complete indices of both generic and specific names to the whole. The first four volumes will contain only an Index of Genera. It is perhaps only right to add that the possibility of completing the work must in part depend on the support accorded by entomologists to the successive volumes as they appear.'" The evident value of such catalogues will undoubtedly influence American entomologists to contribute their share of that support to which Mr. Kirby refers.

CHOLERA AND FLIES.—It may not be amiss to call the attention of the public to the great danger from house flies as agents in spreading the contagion should there be an epidemic of cholera. I have repeatedly observed that these insects will ride for a number of miles on street cars, and doubtless also upon other vehicles of transit, such as railway coaches, etc., though I have never made observations upon any conveyances but the ordinary tram or horse car. Suppose a case: imagine a cholera victim upon the street or anywhere else vomiting; the flies present are attracted and drink until sated, and have their feet and mouth parts wetted with the vomit containing the germs. They then, perhaps, fly out into the street, take a place on a horse car, ride several miles, dismount, fly into another house, where the family are at dinner, and contaminate the food set before them with the germs of the cholera carried on the mouth parts and feet of the insects. Some of the family sicken and die, yet no one of them will ever, perhaps, suspect that the flies may have carried the germs, as supposed above, for miles from some other case. The safeguards are to at once clear away, disinfect with corrosive sublimate solution and scald the spots where the vomit has been thrown, and to be vigilant in the use of fly-screens, fly-traps, etc. During the late war the late Professor Leidy pointed out, with beneficent results, that the common house-fly was instrumental in spreading the contagion of hospital gangrene. Why not beware of this imprudent and ubiquitous little dipter in carrying and spreading the contagion of the dreaded Asiatic plague now menacing us?—JOHN A. RYDER, *in Public Ledger*.

GUNNING FOR BUTTERFLIES.—All, no doubt, are familiar with the usual methods and paraphernalia wherewith butterflies are captured and preserved; the man with the gauze net, poison bottle, cork-lined box, folded paper envelopes, wire pins and sundries *ad libitum*, long ago ceased to be a curiosity in civilized lands. But there are some unusual methods and implements, a description of which will be likely to prove of interest. Prominent among them is gunning for butterflies, an expedient that is most useful where tropic vegetation induces high flight, and renders by means of its density all chance for pursuit impossible. For this a small bore gun or rifle is best, and dust-shot, such as is used by the humming-bird hunters on the Amazon, or a water load is best. Any shot coarser than dust-shot will prove too heavy and will ruin the specimen for sale by tearing the wings. A gun that will scatter the dust widely should be selected, and even then a few shot bunched may tear off a head or an abdomen and ruin the prize. My own preference is for a rifle firing a 32-calibre, long cartridge, loaded with water. These cartridges can be obtained with an extra heavy charge of powder and without the ball in them. Before loading they should be smeared inside with melted paraffine applied with a camel's-hair brush; this prevents the water load from moistening the powder. But even with this precaution it is best to load only so many shells as are likely to be used during the day, and the water should be emptied from those that are left over at night. After filling the shell with water up to within a thirty-second of an inch from the rim, a tight-fitting, oiled wad can be forced down and a light coat of paraffine be applied on top with the brush. I have tried water thickened with starch, with gum arabic, and with gum tragacanth, but I have never been able to see that anything has been gained by thus rendering the charge somewhat more self-adherent. The water load is much more sure to bring yonr prize "to grass," and is not nearly so liable to tear and denude the wings. The dust-shot will often cause a large specimen to deflect its course, and by unmistakable signs show that it has been hit, yet will not bring it down.—*Goldthwaite's Geographical Magazine*.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

ZOOLOGISCHER ANZEIGER, No. 394.—On the larva of *Lagoa*, a Bombycine caterpillar with seven pairs of abdominal legs; with notes on its metameric glandular abdominal processes, Alpheus S. Packard. On ants in thorns of African Acacias, Prof. E. Emery.

REVUE BIOLOGIQUE DU NORD DE LA FRANCE, 4e An. No. 10, July, 1892. —Memoir on some *Acarina* and *Thysanura*, parasites or mess-mates of ants, R. Moniez.

CANADIAN ENTOMOLOGIST, July, 1892.—Notes on Coleoptera, John Hamilton. A new species of *Eudamus* H. Skinner. Notes on North American Tachinidæ, with descriptions of new genera and species, C. H. T. Townsend. Insects attracted by fragrance or brilliancy of flowers for cross-fertilization, R. E. Kunze. New North American Microlepidoptera, C. H. Fernald. New forms of *Ichthyura*, H. G. Dyar.—August, 1892. The first or post-embryonic stage of the pea and bean weevils, C. V. Riley. Some notes on the margined soldier beetle (*Chauliognathus marginatus*), C. V. Riley. The species of *Mamestra*, A. R. Grote. Mr. Walker's types, A. R. Grote. Ovipositing of *Melitea chalcedon* in paper envelopes, R. E. Kunze, M.D. Lepidoptera from Marshall Pass, Colorado, T. D. A. Cockerell. Biologic notes on New Mexico insects, C. H. T. Townsend. A list of the butterflies found at Marshall, Mo., and vicinity, Owen J. Staley.—September. Presidential address, Entomological Club, A. A. A. S., E. A. Schwarz. Some beautiful new Bombycids from the west and northwest, B. Neumoegen. Preparatory stages of *Catocala stretchii* Behr., G. H. French. Synopsis of the North American species of *Astatus*, W. J. Fox.

TRANSACTIONS OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1892, Pt. 2.—Additions to the Longicornia of Mexico and Central America, with remarks on some of the previously recorded species, by the late H. W. Bates (74 n. sp. and 6 new genera).

NEW MEXICO AGRICULTURAL EXPERIMENT STATION, Bulletin No. 7, 1892.—Scale insects in New Mexico, C. H. T. Townsend.

THE KANSAS UNIVERSITY QUARTERLY, I, 1, 1892.—Notes and descriptions of Syrphidæ, W. A. Snow. Notes on *Melitera dentata* Grt., V. L. Kellogg. Diptera Brasiliana, pt. 2, S. W. Williston.

SOUTH DAKOTA AGRICULTURAL COLLEGE EXPERIMENT STATION, Bulletin No. 30.—Parasites of the large willow saw-fly; bee keeping; soapsuds for cabbage lice, I. H. Orcutt, J. M. Aldrich.

MARYLAND AGRICULTURAL EXPERIMENT STATION Bulletin No. 16.—Insects injurious to the grain of wheat, E. W. Doran.

PROCEEDINGS OF THE ENTOMOLOGICAL SOCIETY OF WASHINGTON, vol. ii, No. 2.—The insect collections in the Berlin Museum. Notes on the genus *Melittobia*, W. H. Ashmead. Mimicry in spiders. A new genus of Phalangiidæ. On *Prodidomus rufus* Hentz, Nathan Banks. Notes on the food habits of some species of Chrysomelidæ, F. H. Chittenden. The ravages of *Liparis monacha* in Germany, and means of defense and results of work against *Liparis monacha* in Europe, B. E. Fernow. A list of spiders from Indiana, W. H. Fox. Note on the food-plants of some Capsidæ from vicinity of Washington, D. C., Otto Heidemann. Appearance of mealy bugs parasitized by *Leptomastix*. Habits of *Melittobia*, L. O. Howard. A study of the ovipositor in Hymenoptera, C. L. Marlatt. A list of the Aranæa of the District of Columbia. A contribution to the study of the spider fauna of the Arctic regions. Notes on the classification of the Ixodidæ. Contributions to the knowledge of the life-history of Arachnida, Geo. Marx. Peculiar habits of *Ammophila gryphus* Sm., T. Pergande. Notes on *Lema Sayi*, W. D. Richardson. Note on the life-habits of *Megilla maculata*. On the larva and some peculiarities of the cocoon of *Sphecius speciosus*, Mexican jumping bean. On the insects affecting the Agave. A probable microgaster parasite of *Eleodes* in the imago state. Our American ox warbles. Further note on *Carpocapsa saltitans* and on a new *Grapholitha* producing jumping beans. Fig insects in Mexico, C. V. Riley. Note on *Phytobius*. A correction. Food habits of *Halticini*. Verdigris in Coleoptera. Time of flight in Lachnosterna, E. A. Schwarz.

INSECT LIFE, Washington, D. C., vol. iv, Nos. 9 and 10.—Pea and bean weevils. The ox bot in the United States, C. V. Riley. Ravages of the leopard moth in Brooklyn, Nicholas Pike. How far do bees fly?, Frank Benton. Note on the water bug found by Rev. J. L. Zabriskie, E. Bergroth. Early published references to some of our injurious insects, F. M. Webster. Strange developments of Stomata on *Carya alba* caused by Phylloxera, D. A. Owen.—11 and 12, August, 1892.—Some interrelations of plants and insects, C. V. Riley, figs. A new *Icerya* parasite, L. O. Howard. The West Indian rufous scale (*Aspidiotus articulatus* Morgan), T. D. A. Cockerell. Life-history of *Calothysanis amaturaria* Walk., a Geometrid moth, A. S. Packard. Steps towards a revision of Chambers' Index, with notes and descriptions of new species, Lord Walsingham. Notes on *Lachnosterna*, G. H. Perkins.

THE ENTOMOLOGIST, August, 1892.—On the identification of *Attacus atlas* Linn. and its allies, with remarks on some other species of the genus, W. F. Kirby. Notes on the synonymy of Noctuid moths, A. G. Butler.

DIRECTIONS for collecting and preserving insects, C. V. Riley, being part of Bulletin of the U. S. National Museum, No. 39, pp. 149, illustrated.

JOURNAL OF THE LINNEAN SOCIETY 24, 149–50.—Catalogue of the described Hemiptera-Heteroptera and Homoptera of Ceylon, W. F. Kirby.

REVISION of the genus *Cucullia;* Revision of the Dicopinæ; Revision of *Xylomiges* and *Morrisonia*, John B. Smith, in Proc. U. S. National Museum, vol. xv, pp. 33–86.

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NOTES on the Transformations of some species of Lepidoptera, Henry Edwards and S. Lowell Elliott; edited with additions, by Wm. Beutenmüller. Ext. Bull. Am. Mus. Nat. Hist., N. Y.

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ON the earlier stages of some species of North American moths, W. Beutenmüller. Ext. Bull. Am. Mus. Nat. Hist., N. Y.

BIOLOGIA CENTRALI-AMERICANA, Part 102, May, 1892.—Arachnida Araneidea, O. P. Cambridge, pp. 97–104. Coleoptera: vol. iv, pt. 2, G. C. Champion, pp. 393–400, pl. 18; vol. vii, H. S. Gorham, pp. 169–176. Lepidoptera-Heterocera: vol. ii, H. Druce, pp. 25–48, pl. 44. Diptera: vol. iii, S. W. Williston, pp. 73–89, pl. 2.—Pt. 103, July, 1892. Lepidoptera Heterocera, vol. ii, pp. 49–96, pls. xlv–xlviii, H. Druce.

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ANNALS AND MAGAZINE OF NATURAL HISTORY, ix, 54.—Descriptions of new genera and species of Pyralidæ contained in the British Museum collection, W. Warren.

LEPIDOPTERA INDICA by F. Moore. Pt. 10. Continues Satyrinæ; 7 colored plates.

A monograph of Oriental Cicadidæ by W. L. Distant. Pt. 5, pp. 97–120, 3 plates.*

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* Contains new species other than North American.

JOURNAL OF THE ROYAL MICROSCOPICAL SOCIETY, August, 1892.—Note on the process of oviposition as observed in a species of cattle tick, R. T. Lewis, 1 pl.

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ENTOMOLOGISCHE NACHRICHTEN, Berlin, xviii, 12, June, 1892.—A noteworthy case of mimicry, K. M. Heller.—16, August, 1892. A fighting and sociable male bee, C. Verhoeff.

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, v, 1 (Lepidopterologisches Heft), Juue, 1892.—On the family Siculidæ Guenée,* Dr. A. Pagenstecher, 1 pl. New species and varieties of palæarctic Geometridæ from my collection, Dr. O. Staudinger.

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TRANSACTIONS AND PROCEEDINGS OF THE NEW ZEALAND INSTITUTE, 1891, xxiv, Wellington, May, 1892.—Further *Coccid* notes, with descriptions of new species and remarks on *Coccids* from New Zealand, Australia and elsewhere, W. M. Maskell, 13 plates. Catalogue of the described species of New Zealand Araneidæ, A. T. Urquhart.

BIOLOGISCHES CENTRALBLATT, ERLANGEN, September, 1892.—Contributions to the biology of the Phryganeidæ, Grafin Maria v. Linden.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE BELGIQUE, xxxvi, 8, Brussels, August 6, 1892.—A special form of temporary colonies of *Coccinella septempunctata*, F. Plateau. Phytophaga of Chota Nagpore,* A. Duvivier.

MEMOIRES (of the same).—I. Synonymical catalogue of the Buprestidæ described from 1758 to 1890, C. Kerremans, pp. 304.

ZOE, III, 2, San Francisco, July, 1892.—Notes on the Tenebrionidæ observed in San Diego County, F. E. Blaisdell. Insects affecting Yucca blooms, C. H. T. Townsend.

*** Contains new species other than North American.**

A Synonymic Catalogue of Lepidoptera Heterocera (Moths), by W. F. Kirby. Vol. i, Sphinges and Bombyces. London: Gurney & Jackson, 1892, pp. xii, 951. Containing the full synonymy of every species described up to May, 1892, and a complete alphabetical index of genera. Price, £2 2s. nett.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

LEPIDOPTERA.

Cucullia similaris, *C. obscurior*, *C. dorsalis*, *C. bistriga*, *C. cinderella*, *Eutolype bombyciformis*, *Copipanolis borealis*, *C. fasciata*, *Xylomiges peritalis*, *X. ochracea* J. B. Smith, Proc. U. S. National Museum, vol. xv, pp. 33–86.

Grapholitha sebastianiæ Riley, Proc. Ent. Soc. Washington, ii, 2, p. 214.

Eudamus coyote Skinner, Can. Ent. July, 1892, p. 164, Texas.

Ichthyura multnoma, *I. albosigma* var. *specifica* Dyar, Can. Ent. July, 1892, p. 179.

Heliodines tripunctella p. 384, *H. sexpunctella*, *H. unipunctella*, Walsingham. Insect Life, iv, p. 385, 1892.

Aegeria rubristigma Kellicott, Can. Ent. xxiv, p. 211, Ohio.

Bombycidæ: *Melia* n. g. Neumoegen, Can. Ent. xxiv, p. 225; *M. danbyi* id., Brit. Col. *Hyparpax venus*, p. 226, Col. *Notodonta descherei* p. 227, Brit. Col. *Halesidota sanguivenosa*, p. 228, B. C.

New species of Heterocera from Mexico and Central America, Druce, Biol. Cent. Am. Lepid.-Heter., ii, pp. 49–96.

HYMENOPTERA.

Cerchysius iceryæ L. O. Howard, Insect Life, iv, 11 and 12, p. 379, 1892.

Astatus pygidialis Fox, Can. Ent. xxiv, p. 234, N. J., Tex.

ARANEINA.

Datames caspari Marx, Proc. Ent. Soc. Washington, ii, 2, p. 254, Mex.

Caddo n. g. Phalangidæ. *Caddo agilis* Banks, Proc. Ent Soc. Wash., ii, 2, p. 249.

DIPTERA.

Callicera montensis, *Melanostoma* n. sp.; *Syrphus ruficauda*, *Brachyopa cynops* Snow, Kansas University Quarterly, i, 1, p. 34, 1892. Eight new species of *Conops* Snow, Kansas Univ. Quarterly, i, 1, p. 43.

New genera and species of North American Tachinidæ, Townsend, Can. Ent. July, 1892, p. 165.

Entomological News for September, was mailed August 31, 1892.

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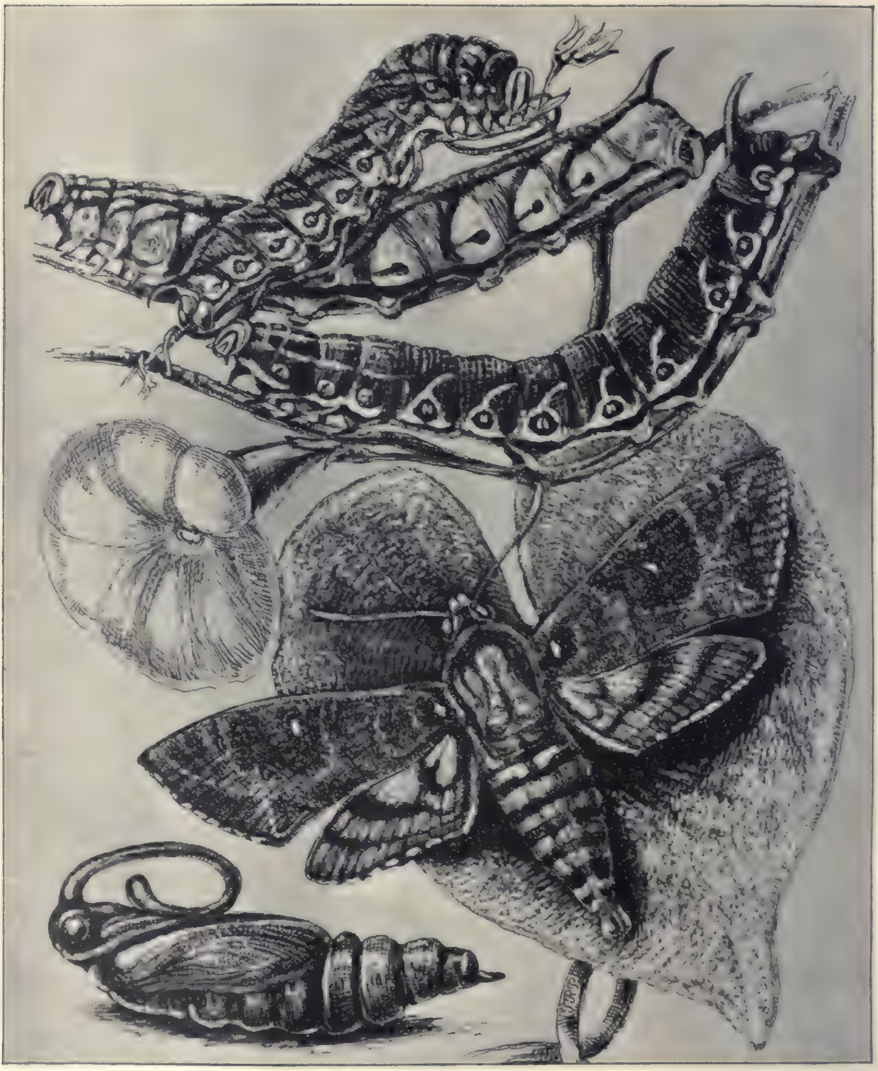

PROTOPARCE (SPHINX) CINGULATA Fab.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. NOVEMBER, 1892. No. 9.

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OUR plate illustrates the larva, chrysalis and imago of *Protoparce cingulata* Fab. The original drawing was made from life by the late T. R. Peale. This moth expands a little over four inches. It is readily recognized by the lateral rows of dark pink spots on the abdomen and the pink color on the inferior wings.

LARVA HUNTING IN WINTER.

By RICHARD E. KUNZE, M.D., New York.

(Continued from page 197, Vol. III, No. 8.)

February 14th had another larvæ hunt in the Cat-tail Flags of our suburbs on the Harlem River flats. Mr. J. Mohns accompanied me and about three dozen larvæ were found. In some stems of *Typha latifolia* we found both the empty pupa-case of a brood, as well as the full grown larva of the second as I am led to believe. In three or four different stems we found evidence of such. In quite a number of instances found two larvæ in one stem. In the "American Naturalist" for 1883, the statement is made by Dr. C. V. Riley that there is one annual brood of *Arzama obliquata*, whereas Dr. Kellicott found two such in one season.

February 28th I went over to Long Island on a biting cold day for the last hunt of the season. The ground of the swamp was frozen over solid in all but well-protected parts. Mr. L. Kohl went with me, a staunch collector 'midst snow squalls, of which we had several and equally tireless when surrounded by clouds of mosquitoes. We found sixty larvæ, of which we unconsciously slaughtered about eighteen in the following manner. The spot selected is very miry and surrounded by shrubbery, but inaccessible, except on coldest days of year. There we struck a bonanza. We did not find many larvæ above frost line, and I suggested to my friend, who carried a mechanic's jack-knife, to cut reeds as far as possible below frozen parts. By so doing we found many more, but mutilated about every third larva discovered. There was from three to five inches of frozen muck, through which we could not cut, and in this layer of frigid soil found two-thirds of all specimens. The stems were frozen solid below water-line and a thin coating of ice surrounded the Winter quarters of the larvæ. The interstitial part of stalks below frost line surrounding galleries was filled with icy particles and hard to cut. I found repeatedly both larvæ and empty pupa-cases in one and the same stem, thus verifying Dr. Kellicott's statement that *A. obliquata* is double-brooded.

At the end of the first week in May, some of these larvæ transformed into pupæ; others had turned black in color previous to such transformation. I kept each larva in a section of the *Typha* stem, placed into a jar containing damp moss. A few that ventured out of their Winter quarters and buried in the moss, died during a cold snap subsequently. Of others I had on previous occasions collected later in April, after cessation of heavy frosts, none died with me, although the larvæ were removed from the stems when found and placed into damp moss until the last two transformations were completed.

ON ARGYNNIS ASTARTE Doub.-Hew. AND OTHER MATTERS.

By Dr. HERMAN STRECKER, Reading, Pa.

Argynnis astarte Doub.-Hew. ("Genera Diurnal Lepidoptera," t. 23, fig. 5), which has only been known, since its discovery in 1848, by one of Lord Derby's collectors in British Columbia, by the type in the British Museum, and the figure above cited, has recently been rediscovered by Mr. Thomas E. Bean, who took examples of both sexes in the Rocky Mountains on the Canadian Pacific Railroad, in the Province of Alberta; from one of these, a ♂, Mr. W. H. Edwards described his *Argynnis victoria* in "Can. Ent." vol. xxiii, p. 198.

The figure of Doub.-Hew. represents the upper side of apparently the ♀, and has been a puzzle to Lepidopterists as to what it could be. It comes nearer to the European *Hecate* and *Ino*, though exceeding them in size, than to any American species. The rediscovery of this remarkable insect is of the greatest interest. Mr. Bean, to whom I am indebted for my example, states that it is very rare, the Summer being so short in the region in which it occurs that some seasons it does not appear at all, there not being time sufficient, save under certain favorable circumstances, between the two Winters for it to develop and go through all the stages.

The literature regarding *astarte* is meagre; there is no description in the "Gen. Diur. Lep." merely the figure.

In "Proc. Ent. Soc. Phil." i, p. 221, W. H. Edwards confounds it with a form or species later described by myself as *Argynnis arge* in "Syn. Cat. Macrolep." p. 114, No. 210.

In "Proc. Ent. Soc. Phil." iii, p. 435, the same author in "Notes on the Argynnides of California" has "No. 4. Arg. astarte Doubleday. *Egleis*, Boisduval in lit. This species Dr. Behr subsequently called *Montivago*, a name which he transfers to the following:

I have the example "No. 4" which Dr. Behr sent me long since, with the types of all his Argynnidæ published in the "Jour. of the Lyc. Nat. Hist. of San Francisco," which is the original of the description of *Argynnis arge* above alluded to.

In "Trans. Ent. Soc." London, 1889, part iv, pp. 535–575, is "A Revision of the Genus Argynnis," by Henry J. Elwes, which is the best thing by far yet published on the Argynnidæ generally; the author states the type is in the British Museum, that it was discovered many years ago in British Columbia, probably in the Cascade Mountains, that it seems to have been overlooked in both Strecker's and Edwards' Catalogues, probably because the locality is incorrectly given in Kirby's as Jamaica; further, that it is distinct from any North American specimens and most nearly allied to *Amphilochus*.

Everything pertaining to the Argynnides is of interest, from an example of *Argynnis hanningtoni*, a species described by H. J. Elwes in foregoing paper p. 558, from Mt. Kilimanjaro, East Africa, I find it is closely allied to the Chilian *Argynnis lathonioides* and *modesta*, and that its position in the general collection would doubtless be between those species and *Argynnis lathonia*, the only European species to which it has any affinity.

Recently in "Science" there appeared a few lines on the nomenclature question, in which Prof. G. H. French upholds the useing of a capital in commencing the specific name of an insect. There is nothing particularly new in this course. Herbst and Jablonsky adopted it in "Natursyst. der Insecten," 1783–1804; Hübner, in "Verz. bek. Schmett." 1816; Boisduval, in "Spec. Gen. Lep." 1836; Horsfield, in "Descrip. Cat. Lep." 1828–29; Hewitson, in "Exot. Butt." 1856–76; Trimen, in "Rhop. Afr. Austr." 1862; the Felders in their various works, also Möschler, Staudinger in his great classical work, the "Cat. Lep. Eur. Faun."

From childhood I never dreamed of doing otherwise, and always adhered to it in my writings when the "Lep. Rhop.-Het." and "Syn. Cat. Macrolep." were published. I was adversely criticised on this point with few exceptions by the American lepidopterists, but later others have pursued the same course, and it is becoming now as general in this country as it has long been in Europe.

ELEMENTARY ENTOMOLOGY.

LEPIDOPTERA–HETEROCERA (Moths).

By Prof. JOHN B. SMITH, New Brunswick, N. J.

The Liparidæ or Dasychiræ, as they are called in Mr. Grote's lists contain divergent material, our American forms considered. *Orgyia* and *Lagoa* have venation of entirely different types and must be separated into distinct families. *Lagoa* is very much more nearly related to the Limacodidæ than to *Orgyia*. Excluding *Lagoa*, and perhaps *Carama*, which I have not at hand for examination at present, the Liparidæ contain broad winged forms with retracted head, short palpi, rudimentary tongue and broadly pectinated male antennæ. In the primaries there is one, in the secondaries there are two internal or free veins, not forked at base; veins 3, 4 and 5, in both wings, are rather close together, 5 not nearly approaching the middle line between 4 and 6. In all the specimens examined by me, there is a distinct accessory cell in the primaries. In the genus *Orgyia* the female is wingless, with feebly developed head and thorax, but enormously distended abdomen. She never moves from the cocoon inclosing the pupa from which she has emerged, and the eggs are laid in a white mass on its surface. In the other American genera the females have developed wings and are larger than the males. The caterpillar of *O. leucostigma*, distressingly common in many eastern cities, will serve as a fair type of the larva of this family, excluding, as before, *Lagoa* and its more immediate allies.

In *Lagoa*, for which Dr. Packard has suggested the term *Lagoidæ*, we have, as has been indicated, an approach to the *Limacodid*, or more typical *Bombyx* type, whereas *Orgyia* approaches the Noctuidæ very closely indeed—so closely that it would be almost impossible to distinguish some broad winged noctuids by venation alone. *Lagoa* has a much heavier body with comparatively smaller wings than *Orgyia;* the vestiture is more loose and divergent, and the species have a "fluffy" appearance. In the female there is a massive tuft of scaly hair at the tip of the abdomen, giving it a swollen, obtuse appearance. The primaries have one simple internal vein; 4 and 5 are rather close together from the end of the median vein, and 6 is from the middle of the cross-vein closing the cell. Numbers 7, 8 and 9 are from a single stalk arising with 10 from the end of the subcostal. The cross-vein closing the cell is inwardly angulated and sends in through it a very distinct fold, feebly dividing the cell. The secondaries have two free internal veins; 4, 5, 6 and 7 are from the end of the median cell, 4 and 7 at the lower and upper angles; while 5 and 6 are from the cross-vein at nearly equal distances from each other and from 4 and 7 respectively. From the middle of the cross-vein, a very distinct fold, rising to the dignity of a feeble vein, runs inwardly, dividing the median cell. There is no free costal vein, but just before the end of the cell the subcostal sends off a branch—vein 8—to the outer margin before the apex.

The Limacodidæ are moderate or small-sized forms, with usually rather plump bodies, retracted head, obsolete tongue and lengthily pectinated male antennæ. The vestiture in the typical genus is dense and hairy, rather than scaly, and the legs are also very densely clothed. The primaries have two free internal veins; 4 and 5 are rather close together from the end of the median; 6 is from near the middle of the cross-vein; 7, 8 and 9 are stalked, and from the same point with 10, at the end of the subcostal. A very distinct fold divides the median cell. The secondaries have two fairly distinct free, internal veins, and often a distinct additional fold. Vein 4 is from the end of the median and 5 is from the cross-vein, about as far from 4 as the latter is from 3; 6 and 7 are from a long stalk at the end of the subcostal, the costal arising out of the latter some little distance from base. A distinct fold divides the median cell.

The above description is drawn from a specimen of *Parasa*, and applies in all essentials to *Limacodes*, *Phobetron*, *Isa*, *Packardia*, and probably also to all the other genera referred to the family. The characters are quite distinctive, and the family is as distinct in its larval characteristics. Almost all collectors who have collected caterpillars know the odd shaped, slug-like larvæ of the Limacodidæ, and if they have handled them with any freedom they have discovered in many of them very decided urticating properties. Most of these larvæ have no very distinct abdominal or prolegs, using the whole of the ventral surface for purposes of locomotion. They make a very dense, oval, or sometimes nearly globular, parchment-like cocoon, in which the larva usually rests without change through the Winter, pupating shortly before emerging as an adult in Summer.

A NEW PAMPHILA.

By HENRY SKINNER, M.D., Phila., Pa.

Pamphila carolina n. sp.—Male expands one inch. *Upperside:* Superiors fuscous, with three small subapical yellow spots, the uppermost one is very small in comparison with the other two. There are two yellow spots about the middle of the cell, which are almost coalesced. There is a row of four yellow spots extending across the wing from about its middle nearly to the interior margin. The inner third of the wing to the base is dusted with yellow scales. Inferiors immaculate (two specimens have traces of yellow spots). *Underside:* Superiors. The spots above are repeated, but are not nearly so well defined, and there is a distinct costal edging of brownish yellow. Inferiors brownish yellow, distinctly spotted with dark brown dots. The body above is concolorous with the wings. The antennæ are distinctly annulated, and the club beneath is entirly yellow, except the tip. Body and palpi below are same color as the wings.

The credit of turning up this new and interesting species is due to Mr. F. M. Jones, of Wilmington, Del. Mr. Jones says regarding the species: "They were captured about one-half mile south of Hamlet, Richmond County, North Carolina, on the border of a small cane-brake. They were not met with on flowers or in the grass, but sat on the leaves of the canes which bordered the road, and when alarmed flew with great swiftness. Two were taken August 23d, and the remaining two in the same locality several days earlier. This species does not seem closely allied to anything else, but will probably fall into the group containing *fusca*, *eufala*, *osyka*, etc. The spotted character of the underside of inferiors distinguishes this species from all others.

ENTOMOLOGIZING ON MOUNT WASHINGTON.—Part I.

By R. OTTOLENGUI, M.D.S., New York.

On the morning of August 5th I started from Jefferson, N. H., with my friend, Mr. Walter Perkins, of Manchester, en route for the summit of Mount Washington. The train left at 7.45, at which hour all the mountain tops were heavily clouded in. As the skies were clear in all other directions we hoped that old Sol would dissipate the mists ere we reached our destination. Besides, it was Friday, and every one knows that Friday is a lucky day upon which to start on an expedition. At least it has been so with me. By the time we left Fabyan's on the curious observation train that goes from there to the base, the weather was still more promising. The grade on this road is very steep, so that the train does not travel at lightning speed. I make this statement that my next may be believed. All along the road *Argynnis atlantis* were extremely numerous. At times as the train whirled by they rose in flight dozens in a group. This tempted me to try catching insects from a moving train. Leaning from the window with my net in readiness, I made a swoop upon the next group that arose and imprisoned five. I had the same experience last year, so that I can safely say the place for this insect is along the road from Fabyan's to the base. Other butterflies I noted, too, so that I have no doubt that a walk along the rails would be interesting to the collector.

Boarding the train for the summit, we started up Jacob's Ladder, seated upon the front platform, legs dangling, and eyes on the watch for any straggler that chanced within reach. I took insects in this way last season, but this year nothing came close enough, though *A. atlantis* and *V. milbertii* were numerous.

There be men, who, finding a good spot for collecting a special rarity, keep the knowledge well locked up in their secret souls for fear, perhaps, that others may go there and get a share of the good things. My main object in writing this is to tempt some other collectors into the charming region, and to describe accurately the most prolific hunting grounds, based upon two different season's experience.

Just before reaching the hotel the train stops at a water-station, possibly a quarter of a mile below. If the collector intends to return to the base the same day, he will have but three hours or thereabouts for work. He would best leave the train at this point rather than go to the summit and waste half an hour for dinner. Having his luncheon with him, he may eat it immediately. He should have his hunting cup, and can get water from a trough that leads pure brook water, icy cold, down to this point for the use of the workmen. This meal will not occupy more than ten minutes, when all is ready for the chase. I may now continue the story of my own expedition.

Leaving the water-station we worked our way southward, following the railroad till it turns for the final ascent, at which point we continued in a direct line, aiming to cross the carriage road, and descend the cliffs on the other side. We did this because we had learned that the heaviest winds seem to be on the north side of the mountain. The *C. semidea* is hard to see among the rocks, often resting flat upon their lichen-stained sides, which they closely resemble. When disturbed they start up, and, being feeble flyers, are readily wafted away by the winds, sometimes being carried out of sight, and seldom less than a hundred yards. One might follow a butterfly that distance across a smooth meadow, but would scarcely undertake it across Washington's rocks.

Crossing the carriage road, one finds a wall built up to mark the road in misty weather and keep the horses from plunging down the abyss. Climbing over this wall and descending from rock to rock, the winds are soon milder and the hunter is protected from them by the steep side of the mountain rising sheer above him.

On this trip we scarcely hoped to find many of the *semidea*, fearing that with July they ceased to exist. This idea was soon dissipated, for within half an hour we had taken about fifty. Suddenly a heavy cloud rolled down upon us, having approached the mountain from the north and topping its summit then extended downward towards the southern valley. At once my friend was lost to sight. We knew that it would be useless to hunt any longer in the face of the rising storm, and moreover, that it would be wise to get to the summit quickly. Exchanging our signal halloo frequently we started up. It is the easiest thing in the world to get lost in the mists of Mount Washington, for one crag is exactly like another, and only the oldest guides can recognize landmarks. But where we were we were safe, for we both knew that less than a hundred yards above was the carriage road, and that between us and it was a continual ascent. The rule was simple. Keep climbing up. Half-way down the mountain this would not hold, for paradoxical as it seems, ascent includes many a descent. One must climb up and down each spur, and they all look amazingly alike.

We reached the hotel in safety, and having determined to remain over night we went in to dinner. The rest of that day was spiritless and uninteresting as the mists grew thicker. Our hopes of hunting moths by light vanished in the impending gloom, consequently we retired at 7.30 to be ready for an early start if the morning should prove propitious.

At five we were up and watching the grandest sight that either of us had ever seen. After a night of storm the sun rose above the clouds and soon dissipated the upper stratum, so that with a bright dome of blue above we looked down upon a sea of clouds that shrouded in every mountain peak and all the valley in every direction. Stretched before us there seemed to be one long sea of ice, such as one imagines to exist in the Arctic regions.

At seven we started down the carriage road walking, and in search of *A. montinus*. Of this insect Dr. Scudder says: "Perhaps no collector has ever seen more than eight or ten in a whole day's scramble." At two miles and a half down the carriage road we reached the zone of dwarf pines, and also entered the clouds which we had admired all the morning. When amongst them so that they shut out the sun, our admiration dwindled. Up to this point we had taken scarcely any thing, being more bent upon reaching our destination than upon collecting. I did capture a single specimen of *Anarta schœnherri*, however, which pleased me, because I had seen so many, all of which eluded me. This little gray noctuid would start up from a rock by the way, and with rapid flight made more swift by the strong winds, would disappear almost before one realized that he had seen a "specimen."

Notes on a small Collection of Formicidæ from Jamaica, W. I.

By William J. Fox, Phila., Pa.

The species enumerated herein were collected in Jamaica during April and part of May, 1891, by Mr. Charles W. Johnson, of the Wagner Free Institute of Philadelphia, and myself. Ants were exceedingly scarce during our visit, which accounts for the smallness of the collection. The discovery of a species new to science, among so few species, shows what a broad field there is to the student of these interesting insects in Jamaica. For the identification of the species my thanks are due to the distinguished myrmecologist, M. Ernest André.

1. *Camponotus fumidus* Rog. Common everywhere under stones and logs. 2. *Formica rufipes* Fab. Port Antonio, on flowers; common. 3. *Odontomachus hæmatodes* Linn. This species was common on the south side of the island in the vicinity of Kingston, but it disappeared entirely on the north side, at least in the Parish of Portland. 4. *Monomorium carbonarium* Sm. Common at Kingston, infesting houses. 5. *Pheidole fallax* Mayr. Common at Kingston; found elsewhere by us. This species seems to take the place of the common "pavement-ant" of the North, *Tetramorium cæspitum*, making its nests in precisely the same sort of places as that species. 6. *Cyphomyrmex reformis* Sm. Near Kingston; numerous specimens. 7. *Cyphomyrmex foxi* André, n. sp. Near Kingston; numerous specimens. 8. *Rhopalothrix simoni* Emery. Near Kingston; numerous specimens. A new locality for this species, which was described from Venezuela.

ON THE SO-CALLED THROAT BOT.

By C. H. Tyler Townsend, Las Cruces, N. Mex.

On May 15, 1892, I took a female *Gastrophilus* which was flying at the throat of my horse. The animal manifested unusual signs of uneasiness, and I noticed the fly alight several times, always exactly in the region ventrad of the first cervical vertebræ. This is the so-called throat bot (*Gastrophilus nasalis* Lin.) of whose habits but little seems to be certainly known in this country.

G. nasalis is easily distinguishable from *G. equi* by its clear wings, dark abdomen, and slightly smaller size. It is quite a pretty species, with rust-colored pile on the scutellum and on the the scutum on each side posteriorly.

Brauer says (Mon. Oestr. 60) that "according to Dr. Green *G. nasalis* deposits its white eggs in the region of the throat of the horse." The same author says of the larva (l. c. 89): "The larvæ live, according to Schwab, massed together [in Haufen gedrängt] in the duodenum of the horse near the pylorus [Pförtner], seldom in the stomach. They pass out with the excrement of their host and never hang fast to the sphincter internus." Nothing more is said by Brauer of oviposition or habits of larvæ.

Schiner (Fauna Austr. Dipt. i, 391–2) says that "the larvæ live in the intestines of the horse." He also records having bred specimens "from pupæ which were dropped in horse-dung."

Brauer says in his monograph that it was at that time not certainly known from America, but suggests *Gastrus subjacens* Walker from Nova Scotia as a synonym. This synonymy is confirmed by Osten Sacken (Cat.), who saw specimens in the British Museum. Beside the above-mentioned specimen from Las Cruces, N. Mex., I have two others from Kansas labeled "throat bot, Sept." Osten Sacken (Cat.) says that he has seen specimens from New York, Utah and Kansas.

The peculiarity of the habits of this species in flying always at the throat of the horse, with the apparent intention of oviposition, is not clear. If, like *G. equi*, the eggs are swallowed, why are they deposited in a place so inaccessible to the mouth of the horse? The animal certainly cannot get at them to swallow them himself, nor have I ever seen horses biting each other in this region of the neck. It would be absurd to suppose that the animal could rub his throat on his fore legs in any way so as finally to get the eggs into his mouth.

So far as I can determine, nothing is known regarding the method of entrance of the eggs or larvæ, into the intestine of the horse. Though I have not found the eggs, I am forced to believe, from the actions of the female fly, that they are actually deposited on the ventral surface of the throat. The habit seems explicable only on the supposition that the larvæ hatch where the egg is deposited, and, while young, burrow through into the œsophagus and are thus swallowed.

ENTOMOLOGICAL NEWS.

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☞ All remittances should be addressed to E. T. Cresson, Treasurer, P. O. Box 248, Philadelphia, Pa.; all other communications to the Editor of ENTOMOLOGICAL NEWS, Academy of Natural Sciences, Logan Square, Philadelphia, Pa.

PHILADELPHIA, PA., NOVEMBER, 1892.

THE NEWS FAMILY.—It may prove useful, as well as of interest, to the readers of the NEWS to know how the journal is managed, and who does the work. The editor has lately been receiving credit not his due, and desires to state to whom it is due for some of the work done for subscribers. The entire business management of the journal is conducted by Mr. E. T. Cresson, who also gives valuable assistance as a member of the Advisory Committee. The success of the Department of Literature is to be credited to Mr. P. P. Calvert, who devotes considerable time each month to this work, going over the literature that comes to the Academy and sifting out all that is of interest to the entomologist. Prof. John B. Smith is to be thanked for looking after the Economic Department. Mr. Charles Liebeck names all the Coleoptera sent to the Department of Identification of Insects, and when needed has the assistance and advice of Dr. Horn, who also looks over all the papers on Coleoptera. Mr. Chas. A. Blake, an honored member of the Advisory Committee, superintends the Mailing Department, and advises the printer when necessary. Mr. Calvert names all the Neuroptera sent to the Identification Department; Mr. C. W. Johnson the Diptera; and Mr. Wm. J. Fox looks after the Hymenoptera and remaining orders, except Lepidoptera. All these gentlemen do the work as a labor of love, and spend much valuable time on it.

NOTICE.—Those who wish to continue their subscriptions to ENTOMOLOGICAL NEWS for the coming year, will please indicate their desire to the Treasurer **before** January 1st next. **No change in price.** We trust that **all** will want to renew, and thus show their appreciation of the gratuitous work of those conducting the publication.

DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. **JOHN B. SMITH**, Sc. D., New Brunswick, N. J.

Legislation against Injurious Insects.—In "Garden and Forest," No. 240, for September 28, 1892, is a very timely editorial on "Legislation against Injurious Insects and Plant Diseases." The matter is already an important one, and is bound to grow more important as knowledge of preventive and remedial measures increases. It is discouraging to the intelligent agriculturist to find, that however well he follows directions and keeps down insect pests on his own land, year after year, he gets no *permanent* result, because his next door neighbor, who does not spray, supplies him annually with an overplus from his land. There is a manifest injustice in this. If the careless or ignorant farmer alone suffered from the consequences of his carelessness or ignorance, one might say "serves him right," but the trouble is, that insects have a habit of moving about, and where there are more than enough on one piece of land, they are no respecters of boundary lines, but cross over into the well-kept and well-cared for acres without hesitation. Where it is possible to poison the insects as they arrive, it simply imposes extra work and extra expense on the man who protects his crop; but sometimes, though an insect may be easily controlled, it cannot be reached until *after* the injury has been done.

A case in point is the red necked Blackberry Cane borer, *Agrilus ruficollis*. By cutting out the galls early in Spring, when trimming, and burning the cut wood, the entire brood of insects can be easily destroyed and future injury prevented. But, if a neighbor allows the insects to develop on his land, the beetles cannot be prevented from coming over and ovipositing in the canes of the clean patch. The beetles cannot be poisoned, for they feed very little. The larvæ cannot be reached, because they are internal feeders. Every infested cane means the loss of next year's crop from that cane, and the careful man is helpless. In an infested field, unless radical measures are taken, the crop becomes smaller each year, until it is no longer worth picking. Then it is often left another year, just to see whether it will do anything, and, finally, after all the insects have hatched the canes may be plowed out. I have seen in Atlantic County, New Jersey, early in September, acres of blackberries in which ninety per cent. of the canes were infested, and in some cases from ten to twelve galls were on a single cane. Such fields are plague spots, and should be dealt with as such. Too much legislation is not an unmitgated blessing, but some means of redress against ignorant carelessness is imperative.

Caterpillars Injurious to Sugar Beets.—Bulletin No. 24 of the Agricultural Experiment Station of Nebraska contains "Notes on certain Caterpillars Attacking Sugar Beets," by Lawrence Bruner. Mr. Bruner, in this Bulletin, mentions two species of *Eurycreon* as having appeared in injurious numbers. One of them is the well-known *E. similalis*, the other is —well, Mr. Bruner has, somehow, omitted giving a name to the other. This omission is supplied in a note by the editors of "Insect Life," vol. v, p. 55, where it is stated that it will probably prove to be *E.* (*Loxostege*) *sticticalis* Linn. A curious fact is, that the form heretofore unknown, has now appeared in the greatest abundance, and is the more injurious. Mr. Bruner gives a general resumé of the life-history of the species, a list of the more common food-plants, cultivated and wild, and suggestions as to remedial measures. Of these, among others, he says: "Other natural remedies can be brought to work against these insects' increase. The chief one of these is the keeping down of certain weeds upon which the caterpillars naturally feed." He then enumerates a number of these weeds, which enumeration need not be repeated here. The main point is in the recommendation to keep down weeds, and it is another proof of the importance of Farm practice to control insect injury, an example of which was also given in the last number of the NEWS. Especially the Cruciferæ are noxious, because they nourish some of our most injurious species during the time the field crop is not available. Clean culture in the largest sense of that term is one of the most valuable measures at hand for the control of insect injury.

The Corn Bill Bug, etc.—Bulletin No. 18 of the Iowa Agricultural College Experiment Station, contains, among other things, "Reports on Injurious Insects," by Prof. Herbert Osborn and Mr. H. A. Gossard. The chief article is on the "Corn Bill Bugs," species of *Sphenophorus*, which have been injurious in Iowa during the past season. *S. ochreus* and *S. parvulus* were the troublesome species, while there is no mention of *S. sculptilis*, which has been the troublesome species in New Jersey for two or three years last past. Nothing new is added to either our knowledge of the life-history or of remedies.

Strawberry slugs were somewhat troublesome, and a short record of some experiments made against the larva of *Monostegia ignota* is given. The application of arsenites is recommended, even where the fruit is approaching maturity. From a sprayed plot—"Within a week after the application was made the assistant entomologist and other employés of the Department ate very heartily of the ripened fruit, with the intent of proving whether or not any ill effects would follow the freest use of the same. No injury, whatever, was experienced." All this premises a careful and intelligent use of the poison, and under such circumstances it can be used up to within a very few days of marketing fruit. Early in the season

I tried the experiment of eating heartily of currants which had been sprayed the day previously with a hellebore decoction made according to my directions. I am happy to say I felt not the slightest discomfort from the dose.

Plutella cruciferarum is also treated, and the arsenites are recommended.

The abundance of Grasshoppers during the Season.—In "Insect Life," vol. v, p. 57, the editors mention the abundance of grasshoppers in several eastern localities. In New Jersey there has also been an unusual abundance of Orthoptera, and especially in the southern parts of the State. Two days' collecting in Cape May County, early in September, was productive of a greater number of specimens and species than I had before taken in the State in any one year. Localities back of the shore, which, in ordinary seasons are swampy and inaccessible, were completely dried out in late Summer, and here the smaller Locustidæ abounded. *Acridium* was unusually abundant, four species being observed, two of them in great numbers. Of the cultivated crops, cranberries suffered more than others; late cabbages were badly injured in some localities, and other garden truck suffered to a less extent; field crops in general escaped.

The great abundance of these insects during the season has induced a somewhat careful study of them, the results of which will appear in a Station Bulletin some time during the month.

A Mosquito Remedy.—"An Experiment against Mosquitoes," is the title of an interesting paper read by Mr. L. O. Howard before the Association of Economic Entomologists at Rochester, and now published in "Insect Life" vol. v, p. 12. He finds that a very small quantity of kerosene on the surface of pools will suffice to kill all aquatic larvæ, including those of the mosquito, and will also kill the female mosquitoes attempting to oviposit. The length of time for which the kerosene remains active, is a matter of some surprise. Mr. Howard did not get the Lamborn prize for saying in the most round-about way that cultivating dragonflies would not answer to destroy mosquitoes, but he has done better, and has made an experiment, the practical value of which cannot yet be estimated. He has proved that under some circumstances it is quite possible to prevent breeding, by mosquitoes, and even to destroy the adults themselves.

Peach Yellows.—Mr. Patton's note on Peach Yellows, in the April number of the NEWS, is evidently based on a misconception, and on ignorance of the voluminous literature of the subject. The "Yellows" is undoubtedly a specific disease of an extremely obscure character, and in no way to be attributed to insect injury. Mr. Patton's note should never have been written.

SUBSCRIBERS sending insects for identification will please put locality labels on their specimens.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

IN the September number of ENTOMOLOGICAL NEWS I find the following: "*Citheronia sepulcralis* is found from Pennsylvania southward." It may be interesting, therefore, for me to report that my friend, Mr. David W. Perkins, of Manchester, N. H., took four specimens of this moth in 1890 in that city, and again captured two this season. Of the six, two were females. They were taken in early morning resting on white houses near electric light poles.—R. OTTOLENGUI, New York.

THY. POWESHIEK.—Female caught and confined July 25th. Within two days twelve eggs were laid. The eggs are smooth, shiny, in color a light green. They are hemispherical in shape, with the edges of the base rounded. By the aid of a medium powered microscope a slight depression can be seen at the apex; size is about two-thirds that of egg of *P. manaataqua*. Larva hatched July 28th. Head of young larva is large, prominent, light brown in color. Body is light yellow sprinkled with a few scattering hairs. Hairs on thirteenth segment very prominent. On each side of the back is an irregular row of fine dark points. Each segment contains four. The two near the front of segment nearear together than those of the back.—HENRY G. WILLARD, Grinnell, Iowa.

VENTURESOME BUTTERFLIES.--During the present season I have been quite struck by the actions of two species of butterflies. The first. *Pyrameis atalanta* L. was observed to appear singly in the small, shady lawn in front of my house, usually about 4.30 to 5 P.M. Whether the same individual appeared each day, or whether there were several similarly inclined, I am unable to say, but only on one occasion did more than one individual appear on the same day. They, or it as the case may be, seemed to be entirely devoid of fear, flitting about, alighting sometimes on my shoulder, or often on my book as I sat reading. If driven off it would return, either to its former position on the back of my chair, or, more than once, alighting on the heads of my two little sons, aged seven and three years, as they were at play, much to their astonishment, and, in the case of the younger, consternation.

The other case was at Niagara Falls. Standing among the rocks, just beneath Prospect Point, I saw what, from the moment's observation I could give it, appeared to be *Pieris rapæ* hover for the moment in mid air then boldly dash forward and disappear in the mist and spray. I watched for several minutes to see if it would again emerge from its vapor bath, but watched in vain. It seemed to have deliberately committed suicide.—F. M. WEBSTER.

MIMICRY IN MOTHS.—Round about my house is a tangled shrubbery of stunted brushwood, with here and there a silver birch, young beech and Scotch fir, and in one corner stands an old outhouse, where a pipe is good at all seasons, says a writer in the "Nineteenth Century." It is half in ruins, and while there one day I noticed that the dingy old brown and gray wall was spotted with oddly-shaped blotches of a darker tint that looked like damp. That same evening, however, I found that the blotches had disappeared, though more rain had fallen and the roof was full of holes. The next day they had all come back. When this had happened a second time I looked more closely at the strange marks, and, to my surprise, I found them to be living creatures, small moths, in fact, with folded or outspread wings, clinging fast on to the crumbling wall. From dusk until dawn they had been out on the wing in the fields and woods—their chief enemies, the birds, being asleep—but at daybreak came back to their old place of safety. The shrubbery was dangerous because the ground was thickly covered with green ivy and still greener periwinkle and moss, where sparrows, finches and tits were always hunting for food, and they would have been soon snapped up. On the old weather-stained wall they were safe.—*Public Ledger*.

RAVAGES OF WHITE ANTS.—A statement by the British Vice Consul, Mr. Warburton, at La Rochelle, reminds us of the terrible ravages of the *Termites*, known as "white ants." It appears that many of the public buildings and private houses of La Rochelle are being destroyed by these pests. Introduced from some tropical land about a century ago, the ants had for a long time kept to a particular part of the town; but on the demolition of some of the houses there, the old wood was allowed to be carried away, and the insects are now found in every part of La Rochelle. In many buildings it is necessary to introduce iron supports, to save them from tumbling into ruins. Linnaeus spoke of these ants as "the great calamity of both the Indies." Wood is their favorite diet, and the only timber safe from them is teak wood (*Tectona grandis*) and iron wood (*Sideroxylum*). They tunnel through the vastest beams of buildings in every direction, leaving a thin layer untouched on the outside, and even coating the outside with clay to conceal their ravages in the interior. Humboldt says that in South America it is rare to find papers of any antiquity. In one night, everything left exposed, even boots and shoes, disappear. Ships are sometimes reduced to a condition sufficient to account for "foundering at sea" during a voyage. The "Albion" man-of-war had to be broken up, after reaching England with difficulty, by being lashed together. If they settle elsewhere in Europe, as they have done at La Rochelle, a new peril will be added to life and civilization.—*Leisure Hour.*

We have received the following account of Prof. Townsend's entomological excursion during the past Summer: We left Last Cruces June 12th with four-horse team and covered government ambulance wagon. Crossing the Rio Grande at Rincon, we drove northwest through Cuchilla Negra, the length of the Cañada Alamosa, and on to Luera Spring. Here we turned west, crossed the Continental Divide, passed between the San Francisco and Datil ranges, and arrived in Springerville, Ariz., June 24th. From this place we drove north, followed down the Little Colorado River as far as the "San Francisco Wash," passing through Holbrook and Winslow on the way, and arrived in Flagstaff July 1st. By previous arrangement we were joined here by Prof. Toumey, of Tucson, and Mr. Cordley, of Washington, who had a similar outfit to our own, and together we proceeded to the Hance place on the rim of the Grand Cañon, seventy miles north of Flagstaff. Mr. Cordley and myself spent four days and nights down in the cañon collecting, about 4000 to 6600 feet below the rim. Returning, we spent two days collecting and climbing the San Francisco Mountain, the top of which is about 13,000 feet above sea level. We parted from Prof. Toumey and Mr. Cordley at Flagstaff, visited the petrified forest southwest of Navajo Springs, followed up the Zuni River, spent three days in the Pueblo, visited Inscription Rock, and returned by the Rio Grande Valley to Las Cruces, August 14th. The whole trip amounted to a drive of over 1200 miles. My companions were a fellow-professor and one of our students. About 1100 specimens of insects were collected by myself, representing nearly one-third that number of species. These were all pinned and labeled in the field. There was collected besides a considerable amount of alcoholic material and galls. I am preparing some papers on the results of the collecting in the Grand Cañon, and on the San Francisco Mountain, which will be published in due time.

It may interest you to know that the first scientific organization in New Mexico has just come into existence. It is known as "The New Mexico Society for the Advancement of Science," and will meet once a month in Las Cruces. The following officers have been elected for the remainder of the current year: President, C. H. Tyler Townsend; Vice-President, F. C. Barker; Recording Secretary, E. O. Wooton; Corresponding Secretary, Arthur Goss; Treasurer, H. D. Bowman; Members of Executive Committee, A. E. Blount and J. P. Owen. The Society hopes to publish an annual numero of its proceedings.—C. H. Tyler Townsend.

A Flight of *Danais archippus* Fabr.—The *Cleveland* (Ohio) *Daily Press* of Sept. 21, 1892, states that on the 19th inst. in the afternoon, "a multitude of butterflies visited Cleveland on their way South. There were swarms upon swarms of them, and for a while they completely filled the air. They were of the large, brown variety, of the milkweed butterfly, and it is supposed that they were started by the storms in the East. Such migrations, though not unusual in the South and West, are very uncommon in this part of the country."

This species has been exceedingly abundant in northern Ohio, and I think in northern Indiana, this present season. At Wooster, Wayne Co., fifty miles S. S. W. of Cleveland, they were not universally abundant on the date indicated. The day was warm and pleasant, and, if I remember correctly, with little wind.—F. M. WEBSTER, Wooster, O.

TRANSACTIONS of the American Entomological Society, vol. xix (1892), pp. 129–256 inclusive, have been printed since our June issue, and contain the following papers: The N. American genera of Calyptrate Muscidæ, Paper II, by C. H. T. Townsend. The N. American genera of Nemocerous Diptera, by C. H. T. Townsend. Preliminary Notes on some African Odonata, by P. P. Calvert. On the Pselaphid genus Trimium, by E. Brendel. Revision of the species of Anthrax from America North of Mexico, by D. W. Coquillett. Descriptions of North American Harvest-Spiders (Phalangiidæ), by C. M. Weed, 7 plates. The Eumolpini of Boreal America, by G. H. Horn. Monograph of the N. American species of Tachytes, by W. J. Fox, 1 plate. A synopsis of the subfamilies and genera of the Membracidæ of N. America, by F. W. Goding.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d, Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. Before sending insects for identification, read page 41, Vol. III. Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Insects have been named for F. D. Twogood, A. A. Wright, Frank H. Johnson, A. G. Weeks, Jr., D. B. Young, Charles U. Clark, James S. Hine, W. T. Davis, M. V. Slingerland, J. H. Bomberger, C. H. Tyler Townsend, Henry Bird, C. M. Weed, George Miller, W. M. Hill, C. B. Aaron.

Entomological Literature.

ANNUAL REPORT OF THE MAINE STATE COLLEGE AGRICULTURAL STATION, 1891.—Bangor, 1892. Pp. 187–207, Report of the Entomologist, F. L. Harvey.

THE ENTOMOLOGIST'S RECORD, London, Sept. 15, 1892.—The genus *Acronycta* and its allies (cont.), Dr. T. A. Chapman.

A Monograph of Oriental Cicadidæ by W. L. Distant. Published by order of the Trustees of the Indian Museum, Calcutta. London, Calcutta and Berlin. Pt. vi, pp. 121–144, 2 plates,* July, 1892.

ANNALS AND MAGAZINE OF NATURAL HISTORY (6), x, 57, London, September, 1892.—Spiders from Madeira,* C. Warburton, 1 pl. On *Eretmotus* and *Epiechinus* (Histeridæ),* G. Lewis, 1 pl.

MITTHEILUNGEN AUS DEM NATURHISTORISCHEN MUSEUM IN HAMBURG, ix, 2, 1892.—Hemiptera collected by Dr. F. Stuhlmann in East Africa,*† Dr. A. Gerstaecker.

LE NATURALISTE, Paris, Sept. 15, 1892.—The first stages of *Erebia melas*, P. Chretien. The parasitic fly of *Acridium peregrinum*, the wandering locust, M. Decaux. New nocturnal Lepidoptera,* P. Thierry-Mieg. The mouth and buccal organs of Arthropods, R. Saint-Loup.

IOWA AGRICULTURAL EXPERIMENT STATION.—Bulletin No. 18, Des Moines, Iowa, August, 1892. Reports on injurious insects, H. Osborn and H. A. Gossard.

AMERICAN NATURALIST, Philadelphia, October, 1892.—Habits of *Prenolepis imparis*, the Winter Ant, W. H. Patton. *Aphænogaster fulva* ♀, id. Chinch bugs in New Hampshire, C. M. Weed.

TIJDSCHRIFT VOOR ENTOMOLOGIE, xxxiv, 1–4, Hague, 1891.—Contribution to the beetle fauna of Madagascar,* C. Schaufuss. List of the Ants and Ant guests of Dutch Limburg, E. Wasmann. *Danais chrysippus* n. var., P. C. T. Snellen, 1 pl. Revision of the Rhaphididæ,* H. Albarda, 10 pls. (includes and figures N. American species). Some exotic Diptera,*† F. M. van der Wulp, 1 pl. On new or little-known Australian Longicornia,*† J. R. H. N. van de Poll. Lepidoptera from Flores,* P. C. T. Snellen. Contribution to the knowledge of the Indo-Australian Lepidopterous fauna,* J. Roeber. Catalogue of Dutch Hemiptera, v, A. J. F. Fokker.

PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES, vi, 2–4, Sydney, 1891–92.—On Queensland and other Australian Lepidoptera,* T. P. Lucas. Notes on Australian Coleoptera, x,* Rev. T. Blackburn. Revision of the Australian Lepidoptera,* v, E. Meyrick.

TRANSACTIONS OF THE ROYAL SOCIETY OF SOUTH AUSTRALIA, xv, 1, Adelaide, July, 1892.—New South Australian Lepidoptera,* O. B. Lower. New genera and species of Australian Coleoptera,*† Rev. T. Blackburn. The Phaneropteridæ of Australia and Polynesia,*† J. G. O. Tepper.

LEPIDOPTEREN VON MADAGASCAR,*† Herausgegeben von M. Saalmueller. Angefangen von dem Verfasser und nach dessen Tode abgeschlossen durch L. von Heyden. Zweite Abtheilung. Heterocera: Noctuæ, Geometræ, Microlepidoptera. Frankfurt a. M. Moritz Diesterweg, March, 1891, pp. 249–531; pls. vii–xiv.

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* Contains new species other than North American. † Contains new genera.

Bulletin de la Societe Philomathique de Paris (8), iv, 2, 1892.—Observations on the buccal pieces of Araneids, P. Gaubert.

Proceedings of the Zoological Society of London, 1892, 2; August 1.—On stridulation in certain Lepidoptera, and on the distortion of the hind wings in the males of certain Ommatophorinæ, G. F. Hampson. On the Orthoptera of the Island of St. Vincent, West Indies,*† C. B. v, Wattenwyl and Prof. J. Redtenbacher, 3 pls. New species of Lepidoptera Heterocera from Brazil, Mexico and Peru, i, W. Schaus.

Transactions of the American Entomological Society, xix, Philadelphia, August, 1892.—Monograph of the North American species of *Tachytes*, W. J. Fox, 1 pl.

Proceedings of the United States National Museum, xv, pp. 361–369, Washington, D. C., 1892.—Insects of the subfamily Encyrtinæ with branched antennæ, L. O. Howard, 2 pls.

Insect Life, v, 1, Washington, September, 1892.—Rose saw-flies in the United States, C. V. Riley, figs. An experiment against mosquitoes, L. O. Howard. Occurrence of *Bucculatrix canadensisella* Chamb. on birches in Rhode Island, A. S. Packard, figs. New injurious insects of a year, C. V. Riley. Notes on the larva of *Amphizoa*, H. G. Hubbard, figs. The Dipterous parasite of *Melanoplus devastator* in California, D. W. Coquillet. A new sweet potato saw-fly (*Schizocerus privatus* Norton), C. L. Marlatt, figs. On the nomenclature and on the oviposition of the bean weevil (*Bruchus obtectus* Say), Eds. Notes on the habits of some species of Coleoptera observed in San Diego County, California, F. E. Blaisdell. Biologic notes on New Mexico insects, C. H. T. Townsend. Further notes on the new Herbarium pest, C. V. Riley. The Australian enemies of the red and black scales, Eds.

Central Experimental Farm, Department of Agriculture, Ottawa, Canada, Bulletin No. 14, September, 1892.—The Horn Fly, J. Fletcher, figs.

The Entomologist's Monthly Magazine, London, October, 1892.—*Elenchus tenuicornis* Kirby, parasitic on a Homopterus insect of the genus *Liburnia*, E. Saunders. Notes on *Elenchus tenuicornis* Kirby, with illustrations, Rev. A. E. Eaton, etc.

The Entomologist, London, October, 1892.—Life-history of *Carterocephalus palæmon*, F. W. Frohawk, etc.

Nature, London, Sept. 29, 1892.—*Peripatus* rediscovered in Jamaica, M. Grabham and T. D. A. Cockerell. *P. jamaicensis* n. sp., p. 514.

Annales de la Societe Entomologique de Belgique, xxxvi, 9, Brussels, September, 1892.—Some ants of the Mediterranean fauna,* A. Forel. The male of *Cardicondyla* and the perpetuated consanguinous reproduction, id.

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* Contains new species other than North American. † Contains new genera.

A PARTIAL CATALOGUE OF THE ANIMALS OF IOWA represented in the collections of the Department of Zöology and Entomology of the Iowa Agricultural College. Prepared by Herbert Osborn. Ames, Iowa, 1892. Hymenoptera (three families), Lepidoptera, Coleoptera.

PROCEEDINGS OF THE IOWA ACADEMY OF SCIENCES for 1890–91, I, 2, Des Moines, 1892.—A new Cecidomid infesting Box Elder, C. P. Gillette. Egg-laying of the Apple Curculio (*Anthonomus quadrigibbus* Say), id. The gall-producing Cynipidæ of Iowa, id. On the Orthopterous fauna of Iowa, H. Osborn. Catalogue of the Hemiptera of Iowa, id.

ZOOLOGISCHER ANZEIGER, Leipsic, Sept. 26, 1892.—On the development of the eyes of the imago of *Vanessa*, H. Johansen. The physiological significance of the stinging apparatus, especially in the nymphs of Hymenoptera, C. Verhoeff.

SCIENCE, New York, Oct. 14, 1892.—Some thoughts on the phylogeny of the mole cricket, E. W. Doran. A wasp study, J. McN. Wright.

VIERTELSJAHRSCHIFT DER NATURFORSCHENDEN GESELLSCHAFT IN ZURICH, xxxvii, 2, 1892.—Researches on the digestive tract of *Gryllotalpa vulgaris*, J. Eberli, figs.

BIOLOGISCHES CENTRALBLATT, ERLANGEN, Oct. 1, 1892.—On biology of wild bees, F. v. Wagner. The international relations of *Lomechusa strumosa*, E. Wasmann.

ZOOLOGISCHER ANZEIGER, Leipsic, Oct. 3, 1892.—New and little-known laws of the biology of Hymenoptera, C. Verhoeff.

THE ANNALS AND MAGAZINE OF NATURAL HISTORY, London, October, 1892.—Descriptions of some new species of African Lepidoptera, W. J. Holland. Description of a new genus and species of African moths, A. G. Butler. On the noctuid genera allied to *Hypætra* Guen., id. Revision of the noctuid genus *Melipotis* Hüb., with descriptions of two new species, id. *Liphistius* and its bearing on the classification of spiders, R. I. Pocock.

DELAWARE COLLEGE AGRICULTURAL EXPERIMENT STATION, Bulletin No. xviii, Newark, Del., September, 1892.—The strawberry weevil (*Anthonomus musculus* Say), M. H. Beckwith, figs.

CANADIAN ENTOMOLOGIST, London, Ont., October, 1892.—Preparatory stages of *Calothysanis amaturaria*, D. S. Kellicott. Insects reared from galls on *Muhlenbergia mexicana*, F. M. Webster, fig. The elm leaf beetle (*Galeruca xanthomelæna* Schrank), J. B. Smith. The inhabitants of a fungus, H. G. Hubbard. The life-history of *Xenos*, id. Note on the species of *Acanthia*, H. Osborn. [The foregoing were read to the Entomological Club, A. A. A. S. at Rochester, Aug. 17–19, 1892.] New N. American Homoptera, E. P. Van Duzee.

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* Contains new species other than North American. † Contains new genera.

ARCHIVES ITALIENNES DE BIOLOGIE, xviii, 1, Turin, 1892.—Note on a series of new excretory organs discovered in *Bombyx mori*, E. Verson.

ENTOMOLOGISCHE NACHRICHTEN, xviii, 19, Berlin, October, 1892.—On the naming of varieties of palæarctic Cicindelas, H. Beuthin. On the development of *Hemerobius subnebulosus* St., and on the change of coloring in Neuroptera, C. Verhoeff.

VERHANDLUNGEN DER K. K. ZOOL.-BOT. GESELLSCHAFT IN WIEN, xlii, 3, September, 1892.—The ant fauna of Bulgaria with biological observations,* Dr. A. Forel, 1 pl. Alpine gall-flies, Dr. F. Thomas, 2 pls., figs.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

NEUROPTERA.

Rhaphididæ: *Rhaphidia assimilis* Albarda, Tijds. Ent. xxxiv, p. 144, pl. 8, fig. 23, Vancouver Is. *R. bicolor*, p. 152, pl. 9, fig. 24, Col. *Inocellia longicornis*, p. 169, pl. 11, fig. 32, Calif. *I. Hageni*, p. 171, pl. 11, fig. 33, Calif.

HYMENOPTERA.

Tachytes, 9 n. sp., U. S., Fox, Trans. Am. Ent. Soc. xix, pp. 234–52.

Encyrtinæ: *Pentacnemus* n. gen. Howard, Proc. U. S. Nat. Mus. xv, p. 366. *P. bucculatricis*, Mo., p. 366, pl. xlvii, fig. 1. *Tetracladia* n. gen. p. 367. *T. texana*, Tex., p. 367, pl. xlvi, fig. 1. *Calocerinus* n. gen. p. 368, for *Tetracnemus floridanus*.

DIPTERA.

Sarcophaga opifera Coquillett, Insect Life, v, p. 22, Cal.

Cecidomyia negundinis Gillette, Proc. Iowa Acad. Sci. I, p. 108, Iowa.

HEMIPTERA-HOMOPTERA.

Thamnotettix Smithi Van Duzee, Can. Ent. xxiv, p. 266, N. J. *T. longiseta*, p. 266, Col. *T. Gilletti*, p. 267, Col. *T. montanus*, p. 268, Brit. Colum., Col.

Doings of Societies.

ENTOMOLOGICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA. Meeting held May 26th, Dr. Horn, Director, presiding. The Publication Committee reported in favor of the publication of a paper entitled, "Preliminary Notes on some African Odonata," by P. P. Calvert. Mr. C. S. Welles stated that in the latter part of March, 1892, he had captured a specimen of *Grapta vau-album*, and saw another one a few days later on the edge of the woods, near his home at Elwyn, Pa. Mr. Martindale announced the capture of thirty-eight specimen of *Anthocharis genutia* by Dr. Skinner on May 9th, at Arcola, on the Perkiomen Creek. Dr. Horn exhibited a portion of his collection of the tribe Galerucini of the family Chrysomelidæ, and spoke of the work he had been doing on them.

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* Contains new species other than North American.

Meeting held June 13, 1892, Mr. Ridings in the chair. Members present: Ridings, Laurent, Martindale, Welles and Skinner. Associates: Fox, Calvert and Nell. Mr. Laurent stated that on the 1st of May this year he started to rearrange his water beetles, and thought he would collect some fresh material and exhibited his captures very nicely arranged. One rare species, *ovatus*, was collected by two boys, who let some specimens go because they would not go in the collecting-bottle they had. All were collected in a short time, one whole day and four afternoons. In all, sixty-six species were taken, numbering about fifteen hundred specimens. Mr. Calvert mentioned having caught *Tetragoneura cynosura*, a rare dragonfly, on June 6th. He had collected a few specimens previously. It flies very high, and its flight is sustained for quite a period of time. It alights occasionally on the edges of woods and thickets. He exhibited specimens of the species and spoke of the characters of the family and its allies. Mr. Nell spoke of the scarity of Microlepidoptera, and Dr. Skinner said the late season had retarded insects in various parts of the West. Mr. F. Weber was elected an associate of the Section. Section then adjourned until September.

Meeting held Sept. 22, 1892, Dr. Horn, Director, presiding. Members present: Liebeck, Martindale, Skinner, Welles, Ridings. Associates: Johnson, Nell, Fox, Weber, Westcott, Haimbach and Dr. Castle. Dr. Horn exhibited two boxes of Galerucini, showing the results of his work on these beetles, and stated that the number of new species was but few, and that too much attention had been paid color values and too little to structure. The material shown will illustrate a coming paper on these insects. Mr. Nell stated that he had taken twenty-six specimens of *Pamphila leonardus* on September 4th, near Atco, N. J. They were found on boneset and iron weed. Dr. Skinner stated that he had received a number of full grown larvæ of *Papilio cresphontes* found on September 18th at Sellersville, Pa., on prickly ash. Mr. Westcott reported seeing *P. cresphontes* and *Callidryas eubule*, at Westville, N. J. Mr. Ridings spoke of the unusual number of *Catocala* moths seen in the city limits during the Summer. Mr. Martindale reported having collected 500 specimens of Lepidoptera in Indiana during a short visit to the State. Dr. Horn mentioned having lately received a new species of *Anophthalmus* from Kentucky. Mr. Martindale reported capturing 200 specimens of *Hemaris thysbe* in Chester County, Pa.

Dr. HENRY SKINNER, *Recorder*.

ENTOMOLOGICAL NEWS for October was mailed September 30, 1892.

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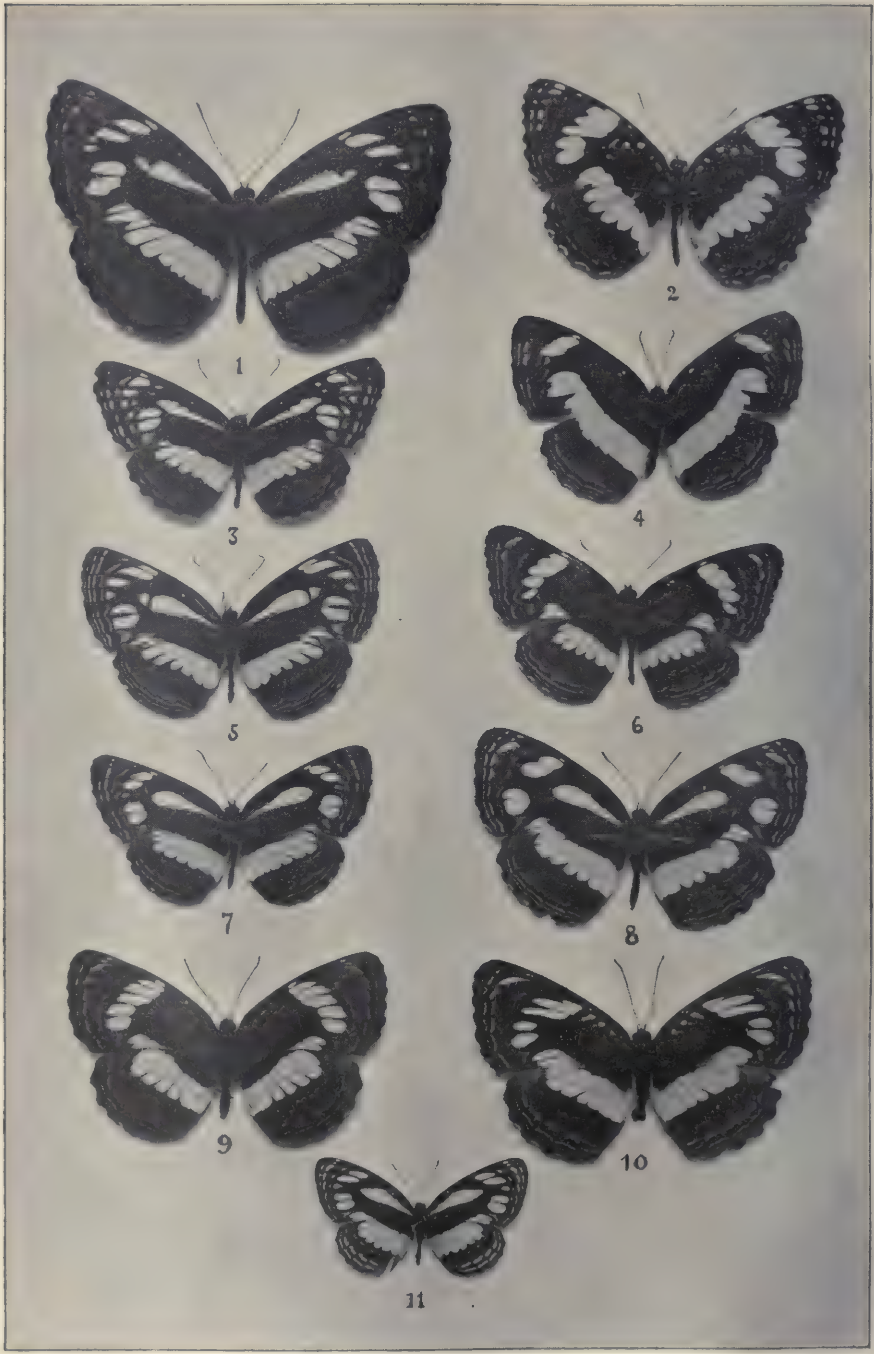

1. N. NEBRODES Hew.
2. N. AGATHA Cram.
3. N. METELLA Doub.-Hew.
4. N. NEMETES Hew.
5. N. MELICERTA Dru.
6. N. METANIRA Holl.
7. N. NICOBULE Holl.
8. N. NICOTELES Hew.
9. N. BIAFRA Ward, var. CONTINUATA Holl.
10. N. BIAFRA Ward.
11. N. MIXOPHYES Holl.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION,

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. III. DECEMBER, 1892. No. 10.

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NEW COLEOPTERA FROM CALIFORNIA.

By F. E. BLAISDELL, M. D.

Eleodes interrupta n. sp.—Length 16.6 mm.; width 7.1 mm. Body slightly inflated, convex; color black. *Head* little shorter than wide, rather more than half as wide as prothorax; finely and evenly punctate, somewhat coarser on epistoma; antennæ slender, reaching to base of pronotum, terminal three joints but slightly widened. *Prothorax* one-sixth wider than long, evenly convex, apex feebly sinuate in circular arc, angles obtuse; sides in anterior half moderately arcuate, in posterior half straight and moderately convergent to base, margin rather abruptly interrupted at middle for the distance of one millimetre; base slightly arcuate, angles quite broadly obtuse; disc very finely, evenly and sparsely punctate, alutaceous. *Elytra* at base perceptibly wider than contiguous base of prothorax, and about two and one-half times longer than the latter; widest at middle; sides evenly arcuate; humeri not prominent; disc smooth, shining, punctate, not sculptured in anterior half, posteriorly sulcate, ridges narrow, very convex, nearly angulate, alternately prominent, intervals twice as wide as ridges, outer longest, others gradually shortening towards suture, sutural sulci obsolete, punctures not impressed, moderately fine, nearly simple, not asperate at sides, arranged in rows, alternate rows coarser passing into the intervals, in the finer series the punctures more distant and less regularly placed, becoming mostly obsolete on ridges; apex declivous, tips everted. Legs moderately slender; anterior tibial spurs very unequal, middle equal, posterior subequal.

Hab.—San Diego.

This species has the general appearance of *gentilis*, but is unique in the character of its sculpturing.

Blapstinus Coronadensis n. sp.—Length, males 4.6–5.6 mm.; females 5–6.3 mm.; width ♂ 2–5 mm.; ♀ 2.8 mm. Form elongate oblong; color black, legs and antennæ rufo-piceous; surface polished; pubescence evenly distributed, conspicuous, rather long, recumbent, pale flavate. *Head* feebly transverse, moderately finely densely punctured; epistoma narrowly and deeply sinuate; eyes moderate, rounded; antennæ rather slender, moderately incrassate in last four joints. *Prothorax* moderately convex, about a third wider than long; apex feebly emarginate in circular arc, angles slightly acute; sides subparallel in posterior third and thence to apex rather strongly arcuate; base transverse, lateral sinuations feeble, angles right; disc moderately finely, densely and evenly punctured, basal impressions just perceptible. *Elytra* about two and a half times longer than prothorax, sides subparallel, very feebly arcuate to posterior third, then rather evenly and strongly to apex, which is rounded; base transverse, not perceptibly wider than contiguous base of prothorax; disc finely striate, striæ very feebly impressed, finely and regularly punctured, intervals just visibly convex, extremely finely punctured; scutellum bright. *Abdomen* finely and sparsely punctured; legs moderate, femora rather robust.

Male.—Anterior and middle tarsi dilated, but not as strongly as in *rufipes*. Eyes larger; abdomen feebly impressed in middle towards base; head shorter and more transverse.

Described from a male and female, supplemented by a series of one hundred specimens. A distinct species and readily distinguished from *rufipes* by having well-developed wings, which are about one-third longer than the elytra, the smooth and polished surface, denser pubescence, finer punctuation, nearly flat elytral intervals, darker legs and less dilated tarsi. The pubescence is very readily removed by slight friction, and cabinet specimens are generally quite denuded. The species is diurnal. Frequents garbage heaps during May and June.

I have carefully compared the above series with a large series of *rufipes* and found no intergrading of alar development. On the other hand, there was a wonderful constancy in the form and size of the rudimentary hind wings in the latter species, agreeing in details with the description given by Thos. L. Casey in his "Coleopterological Notices," p. 440.

Careful examination of a large series of *rufipes* demonstrates that the elytral intervals may be decidedly convex, and always more so than in *Coronadensis*. The former species is often quite pruinose when captured, and this I have never observed in the latter.

Ulus latus n. sp.—Length 7.1 mm.; width 3.7 mm.; elliptical, strongly convex, piceous, legs and antennæ concolorous; pubescence pale luteous, rather long, moderately slender, recumbent, and quite evenly distributed, but not densely so. *Head* moderately transverse and convex, rather coarsely and evenly, but not densely punctate; epistoma rather deeply sinuate; antennæ slender, joints nine, ten and eleven, subequal in width, last visibly longer than wide and narrowly rounded. *Prothorax* scarcely twice as wide as long; apex rather more than three-fourths as long as base, quite strongly emarginate in circular arc, angles slightly rounded; sides convergent, in basal third straight, very feebly arcuate in anterior two-thirds; base moderately arcuate at middle third, laterally slightly sinuate, angles right; frimbriæ moderately short and robust; disc convex, strongly so in basal third, feebly dished at lateral sinuations, rather coarsely and unevenly punctate, somewhat denser at sides, interspaces polished. *Elytra* strongly convex, widest in middle third; base nearly equal to contiguous prothorax; sides evenly arcuate, apex rounded; disc feebly striate, striæ not perceptibly impressed, closely, evenly and rather coarsely punctured, intervals equal, not convex, finely and quite sparsely punctate, surface feebly shining; scutellum narrow, triangular, impunctate, glabrous; pubescence confined to intervals, giving the elytra a decidedly striate appearance. *Abdomen* finely and rather densely punctate; apical segment slightly dished near tip. Legs long, faintly rufo-piceous, anterior femora decidedly robust.

Type a female. San Diego River.

This species differs from *crassus* in being strongly convex, with convergent sides of prothorax; from *fimbriatus* in the character of the pubescence.

ENTOMOLOGIZING ON MOUNT WASHINGTON.—Part II.

By R. Ottolengui, M.D.S., New York.

At three miles we saw the last straggling *semidea*, and the trees became more like trees and less like bushes. Suddenly a little red butterfly crossed the road close to me. With Dr. Scudder's statement in my mind, I was so astonished to see a real live *montinus* that I stupidly stood still as it flew over the wall and disappeared far down among the crags. I was so disgusted with myself that I started to go in pursuit, but was stopped by Mr. Perkins, who showed me the folly of climbing over a dreadfully steep embankment in search of an insect that had passed from view. Half a mile further we could easily see below us the half-way house, toward which we were aiming. Just here the road makes a long detour in the shape of a horse-shoe. To save a part of the walk we started to climb down and across. Along the rocks we found the curious mountain blue-berry bushes. They are scarcely taller than lichens, and the fruit is most temptingly exposed, being exclusively on the top of the plants. We plucked a handful, but they were not as sweet as those in the valley. Suddenly another *montinus* flitted by, and my first capture was made. Presently we dropped into the carriage road again, about two hundred yards above the half-way house. Between this point and about a similar distance beyond the house, by walking along the road itself, Mr. Perkins and I captured fifteen specimens in the course of half an hour. By this time it was ten o'clock and we started to return, having a long, hard four-mile walk ahead of us. One does not realize, till he tries it, how easy it is to get "out of breath" chasing an insect in this rarified air. But the pursuit of such a rarity as *montinus* makes one forgetful. We had gone about half a mile, in the next half hour, and taken five more specimens, when we were overtaken by a man driving a buck-board, and quickly engaged passage with him to the summit. The trip up was thus made very enjoyable as whenever we saw anything on wings it was easy to get out and go after it. Thus we took five more of *montinus* in the next fifteen minutes, after which we saw no more. I may pause for a few comments. Observe that we took twenty-five of *montinus* before eleven o'clock, an hour after which we usually make our best captures in the valley. I am confident that if we could have remained on the spot for the rest of the day we could have taken a hundred specimens, as we were fortunate to find them plentiful. This makes it worth while for any one designing to go there to note the date, which was August 6th. They feed on any of the mountain flowers, but nearly all of ours were taken on a variety of Golden-rod.

I made two other notable captures during the ascent. One a fairly large gray geometer, which I have not identified as yet, and the other a *Plusia*. This is either *octoscripta*, or something unknown to me. It is a brilliant black with gray markings, and a handsome specimen.

Reaching the summit we had dinner, and then went for some more of *semidea*. Hunting in the same place above described I soon found how to capture *Anarta Schoenherri*. I will endeavor to direct the reader. Whilst it is true that the rocks look all alike, it will not be hard to select the largest patch of green seen about a hundred yards down the cliffs. Reaching here in pursuit of a single insect which I saw alight, I found *A. Schoenherri* feeding on the blossoms of various plants, and to my astonishment found no trouble in taking them with a bottle, obtaining about a dozen good specimens. Here also were *semidea*, which could be picked up in the grass with the fingers. Unfortunately, it was really too late in the season for *semidea*, and when the record of the two days was examined we found that we had only sixty good specimens between us, throwing away more than that number.

Though not a Coleopterist myself, I try to remember that others are when I am hunting, and capture anything that I see. Thus I took ten varieties of beetles among the rocks at the summit, which will be given to the first friend who applies for them. Two are handsome species of Longicorns. As a matter of curiosity I also captured and brought home to be labeled "Summit of Mount Washington" *Pieris rapæ*, *Colias philodice*, *Vanessa Milbertii*, *Argynnis atalantis*, *Grapta progne*, and *Drasteria erechtea*. I have also taken *Papilio turnus*.

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EGG AND LARVA OF TWO LITHOSIANS.

By Harrison G. Dyar, Boston, Mass.

Crambidia pallida Packard.

1864.—Pack., Proc. Ent. Soc. Phil. iii, 99.

Egg.—Oblately spheroidal, slightly more flattened on the basal side than above, smooth, shining, pale pink, not obviously reticulated, though the surface is somewhat irregular; diameter 0.6 mm. The eggs are laid perfectly loose and separate so that they roll around in the box.

First larval stage.—Head round, smooth, shining, pale brownish; mouth and vertex brown; ocelli black; width about 0.25 mm. Body cylindrical, the warts not perceptible, but the hairs distinct, blackish; segmental incisures evident; feet normal. Color pale reddish, darker on the back.

The larva looks like a little *Arctian*, though the warts are not distinguishable. The hairs are simple, pointed at the tip, but swollen, or glandular at the base.

Hypoprepia miniata Kirby.

1837.—Kirby, Faun. Bor.-Am., pt. iv, p. 305.
1879.—Bethune, Can. Ent. xi, 154.
1889.—Hy. Edwards, Bull. 35, U. S. N. M., 55 (references as *fucosa*).

Egg.—Subspherical, much flattened on the basal side, coarsely and evidently reticulated even under the lens. Under a half inch objective it appears covered with broad, rounded reticulations, which leave between them large, shallow, roundedly hexagonal depressions. Color dark, shining, lead color, with a slight metallic green cast. Diameter 0.6 mm. Laid loose and separate.

First larval stage.—Head cordate, black, shining; width about .3 mm. Body deeply incised between the segments, cylindrical, feet normal; warts inconspicuous, hairs distinct, blackish. The body is orange color, with a dark band from near the head to back of the middle, showing by transparency, but later becoming an evident, geminate, brownish dorsal band. The warts are low and conical, concolorous, normal in arrangement, each bearing a single hair. The hairs are minutely spinulated.

COLORADO CYNIPIDÆ.

C. P. Gillette, Fort Collins, Col.

All of the Cynipidous galls or gall-flies mentioned in this paper have been taken by the writer in the State of Colorado since the first of January, 1891. Quite a number of galls, apparently new, have been taken from scrub oaks (*Quercus undulata*), from which no flies have yet appeared. Of these I shall make no special mention until the flies can be obtained, as there is little use in describing the galls alone, and I do not think it right to name galls as if they were insects.

RHODITES.

Bicolor.—Galls moderately common in the foot-hills near Fort Collins and also taken at Manitou.

Fusiformans Ashm.—This is a very abundant gall on rose bushes in the foot-hills of the State from north to south.

Ignota O. S.—Galls taken in foot-hills near Fort Collins. Rather scarce.

Polita Ashm.—Galls found very common on rose bushes at Manitou, Col., on Sept. 10, 1892.

Radicum O. S.—A single gall was taken from the root of a rose in northwestern Colorado in August, 1891, but being immature, no flies issued from it.

Rosæfolii Ashm.—I found the galls of this species quite common at Manitou in September, 1892, and have taken a few specimens from rose leaves in the vicinity of Fort Collins.

Tuberculator Riley, MS.—Galls of what I suppose to be Riley's *tuberculator* I have found common at Fort Collins, Manitou and Dolores, during the past Summer.

ANTISTROPHUS.

Pisum Walsh.—Galls common on stems of *Lygodesmia juncea* in the vicinity of Fort Collins.

ANDRICUS.

But two species of this genus have been taken, both of which are new.

D. cellularius n. sp. Galls.—The galls are small, thin capsules, occurring singly in the buds of *Quercus undulata.* The bud scales cover the galls completely, and there is nothing to indicate their presence until the fly escapes, leaving a small round hole.

Gall-fly ♀.—Black, with reddish yellow feet, antennæ and jaws. Length 1.5 mm. *Head* black and shining, face coarsely striate between the eyes and mouth; vertex, occiput and genæ having a fine crackled appearance, ocelli rather inconspicuous, frontal ridge beneath antennæ broad and prominent, mandibles reddish yellow, except at the very tips, where they are black, palpi whitish; antennæ 13-jointed, reddish yellow in color and infuscate at tip; last joint as long as the two preceding together; slightly clavate. *Thorax* black and with crackled appearance like the head; parapsidal grooves sharply defined, scutellum bifoveate and coarsely rugose, pleuræ coarsely aciculate. *Abdomen* black and highly polished. The large second segment covers nearly the entire surface, fully seven-eighths of it. *Feet* reddish yellow, hind tibiæ and femora more or less infuscate in some specimens. *Wings* hyaline, slightly longer than the body; subcostal, radial and transverse nervures rather stout, the others very weak, the areolet only discernible in very favorable light.

Described from thirty female flies bred from galls taken at Trinidad, Col., May 14, 1892. The flies began emerging May 20th. No males were obtained.

A. frequens n. sp.

Galls.—The galls are dense corky enlargements of small limbs of *Quercus undulata.* They are irregular in size and shape, and are covered with bark like the rest of the limb. Large galls seldom exceed two-thirds of an inch in diameter by two inches in length. All polythalamous; they are exceedingly abundant at Manitou, Col. Galls taken May 8th of this year began giving flies two days later.

Gall-fly ♀.—Black, with head, feet, portions of thorax, and basal portions of antennæ rufous. Length 1.75—2.5 mm. *Head* varying in color from a good cinnamon-brown to almost black, but with no black markings except the tips of the mandibles, the borders of the mouth and the compound eyes. Face coarsely punctured and with striæ radiating from the mouth. Antennæ 15-jointed, rufous at base, last six or seven joints black. *Thorax* somewhat darker than the head, varying from cinnamon-brown to almost jet-black. The surface is finely and densely wrinkled, the wrinkles running in a transverse direction; parapsides narrow, but distinct; the two parallel lines extending back from the prothorax not very distinct; scutellum bi-foveate, the foveæ rather small and very black, surface of scutellum wrinkled like the thorax; thorax and abdomen rather sparsely set with gray hairs, humeri wrinkled like the mesothorax, pleuræ very finely scratched; abdomen black, polished, somewhat rufous in rufous specimens. *Feet*, including coxæ, with the exception of the posterior tibiæ, rufous; the posterior tibiæ infuscate. In dark specimens the posterior femora and the middle tibiæ are somewhat infuscate. In the darkest specimens all of the feet are somewhat blackish. *Wings*, length in large specimens 3 mm., areolet medium in size, but faint on account of the very slight cubital nervure, radial area long and narrow, radial nerve not attaining the costa, the two transverse nervures quite heavy.

Described from thirty-one reared specimens, all females.

NEW SPECIES OF NEPTIS FROM AFRICA.

(Plate IX.)

By W. J. Holland, Ph.D., Pittsburg, Pa.

I have recently been going over the collections of African Lepidoptera in my possession with a view to the preparation of a synonymic catalogue of those of the tropical West Coast. I have completed the revision of the species of *Neptis* found in the Ogove Valley, and make out no less than ten good species and one variety, which some authors would possibly reckon as a species. The species are the following: *nebrodes* Hew., *Biafra* Ward, *nemetes* Hew., *nicoteles* Hew., *nicobule* sp. nov,, *metanira* sp. nov., *mixophyes* sp. nov., *metella* Doubl.-Hew., *Agatha* Cram., *melicerta* Dru. To these add *N. Biafra* var. *continuata* var. nov. I herewith give descriptions of new forms, and the accompanying reproduction of a photograph of the various species I trust will be of assistance to those who are engaged in the study of this somewhat difficult group.

N. Biafra Ward, var. **continuata** var. nov. ♂.—Agreeing with *Biafra* in all respects save in the form of the band of large white spots which traverse the anterior wing beyond the cell. In *Biafra* the three nearest the costa are long and linear and the two following are oval, divergent, and somewhat widely separated from the spots nearest the costa. In *continuata* the spots form a continuous uninterrupted band, in which all the spots, except the lower one, which is suboval, are subquadrate. The difference in the form and spacing of these spots imparts a widely different facies to this form. It is worthy of note that the transverse spots in the cell of the primaries of *Biafra* are not constant. In some specimens they are very faint, and in some altogether wanting.

N. nicobule sp. nov. ♂.—Allied to *N. nicoteles* Hew. The markings of the upperside of the anterior wings differ from those of *N. nicoteles* in the form and arrangement of the transverse white spots beyond the cell, which in *nicoteles* form a continuous band, and in *nicobule* a widely separated series of four spots, of which the one nearest the costa, and the one opposite the end of the cell are minute, while the two middle spots are large and oval. The marginal lines are interrupted below the apex, and near the middle of the outer margin by dark longitudinal shades. The spot of the transverse series situated upon the hind margin of the anterior wings in *nicoteles* is large and bifid; in *nicobule* it is simple, and consists merely of a small subtriangular patch of bluish white scales. Upon the underside of the primaries of *nicobule* the dark shading which interrupts the marginal is much more distinct than upon the upperside, and there are but three submarginal bands of white, while in *nicoteles* there are four. Expanse 43 mm.

N. metanira sp. nov. ♂.—Allied to *N. Biafra* Ward.—The wings are narrower and more produced than in *Biafra*, and the margins are not scalloped, but even. The transverse band of white spots beyond the cell upon the primaries is composed of six spots, the one on the costa minute, the three following large and fused together forming a transverse spot indented outwardly upon the nervules. This is followed by two divergent oval spots, of which the lower one is the smallest. The transverse median band upon the secondaries is relatively narrower than in *biafra*, and more deeply indented externally, and is clouded internally by pale fuscous. The submarginal lines are bright bluish. Upon the underside the primaries have four marginal lines, while in *Biafra* there are generally but three. Expanse 45 mm.

N. mixophyes sp. nov. ♂.—Belonging to the same group as *nicoteles* and *nicobule*, characterized by a long, uninterrupted, white longitudinal ray traversing the cell from the base to its extremity. In *mixophyes* this ray is acute at its extremity and not rounded as in the other species. The transverse median series consists of six white spots arranged in a curve. The two spots nearest the costa are subovate and elongated, the next, opposite the end of the cell, is minute; the next two are large and collocated, the upper one subquadrate, and the lower one subovate. The sixth spot, which is located upon the inner margin, is triangular, and is bisected by the submedian nerve. There are three submarginal lines, the middle one being the most conspicuous. The posterior wings are traversed by a relatively broad median band of white spots indented outwardly upon the nervules. This is followed by a series of narrow fuscous spots, and these are succeeded by a band of darker markings. There are two submarginal series of very narrow white lines. The underside is marked as upon the upperside, but the submarginal white lines are widened enormously, covering the entire outer margin, and the intervening dark spaces are reduced to narrow lines. Expanse 32 mm.

This is one of the smallest species of the genus, and with the exception of *N. Goochi* Trim., from Natal, the smallest species hitherto described from the African continent.

NEW SPECIES OF NOCTUIDÆ.

(Plate X.)

By JOHN B. SMITH, New Brunswick, N. J.

The following diagnoses of new species of Noctuidæ are merely preliminary to the fuller descriptions which have been prepared for the "Transactions" of the American Entomological Society. Not so much *pour prendre le temps*, as to furnish a text for the plate given herewith, and which is made from a photograph of the types to test the possibilities of this method of illustration. The figures are about one-fifth less than natural size.

Mamestra fuscolutea n. sp.; first row 3rd figure.—Dull, somewhat fuscous clay yellow, resembling *trifolii* in this respect. The s. t. line is rather prominent, whitish, with a feebly marked **W**, which is emphasized by the whitish streaks on veins 3 and 4, crossing the line. The irregular ordinary spots are distinctly white ringed. It is an ally of *trifolii* and *chartaria*, and has a vague resemblance to *Hadena devastatrix* from the series of sagittate spots preceding the s. t. line. Expanse 35—40 mm.; 1.40—1.60 inches.

Hab.—Colorado, Bruce; two female specimens No. 284, 291.

Oncocnemis nigrocaput n. sp.; first row, 4th figure.—Head very deep brown or blackish, collar faintly pink at base, bounded by a narrow black transverse line. Color whitish, powdery, the veins blackish; a black basal dash, and a black streak from the orbicular to the outer margin, broken at the reniform in the male, continuous in the female; secondaries

EXPLANATION OF PLATE X, VOL. III.

By an accident, the plate accompanying my diagnoses of "New species of Noctuidæ" was made up differently than intended by me. I did not see proof, and though some of the changes necessitated were made, yet some of the references to the figures are erroneous. I realize that this error is in a measure due to my negligence in failing to number the figures. As they stand on the plate the species represented are:

Rancora strigata n. sp.
Pleroma apposita n. sp.
Noctua flavotincta n. sp.
Calocampa Brucei n. sp.
Mamestra fuscolutea n. sp.
Acronycta n. sp.
Homohadena figurata Harv.
Oncocnemis nigrocaput n. sp.
Oncocnemis extranea n. sp.
Hydrœcia medialis n. sp.
Carneades conjuncta Sm.
Hydrœcia senilis n. sp.
Hydrœcia unimoda n. sp.
Peridroma nigra n. sp.
Caradrina meralis Morr.
Carneades n. sp.

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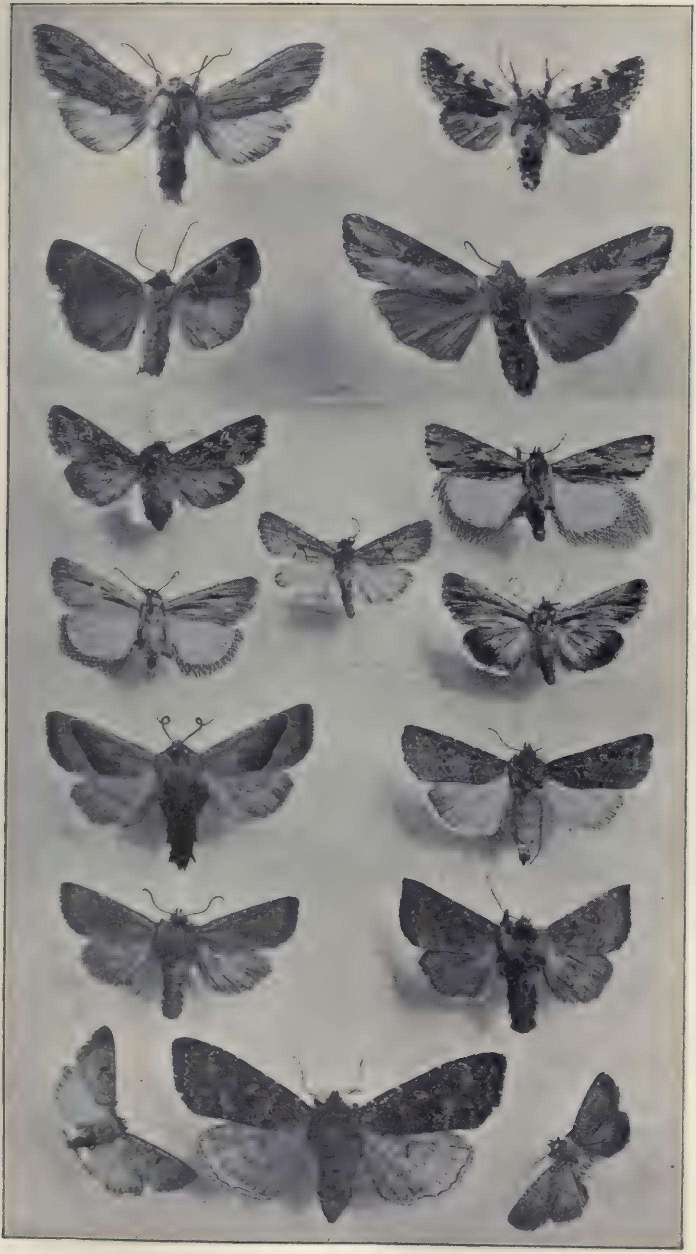

AMERICAN NOCTUIDÆ (Smith).

white. Belongs to the group *atricollaris*, and resembles Mr. Grote's description of *griseicollis*, save that the latter has the transverse lines marked and no basal streak. Expands 1.30 inches; 32 mm.

Hab.—Colorado. Bruce, one ♂ (No. 296), one ♀ (No. 181).

Oncocnemis extranea n. sp.; second row, 4th figure.—Gray with a fuscous admixture; head dusky; collar with a black transverse line at base and near tip. Primaries with a black basal dash, to which the claviform is attached; a black streak in median cell; black interspaceal streaks through the darker terminal space; secondaries pale, with fuscous outer margin. Expands 1.25 inches; 31 mm.

Hab.—Colorado. Bruce, one ♂ (No. 180).

Belongs to group *atricollaris*, but resembles, somewhat, *coloradensis*, of the *Chandleri* group.

Homohadena figurata Haw.; center row, upper figure.—This species was unknown to me when I wrote my revision of *Homohadena*, and was then recorded from Nevada only. Mr. Bruce has now taken it in Colorado.

Acronycta n. sp.; second row, 3rd figure.—Specimens of this species are in several collections and have been sent me for determination. Dr. Riley has given it a mss. name, I believe, to be published in his intended monograph of the genus. The figure is presented here experimentally only and not for purposes of description.

Hydrœcia medialis n. sp.; first row, 6th figure.—Of the usual rusty yellowish, gray, red or brown, varying in shade, the median space distinctly darker. Male antennæ serrate and bristled; secondaries paler, more yellowish, with the median line of underside visible through. Expands 1.72—1.78 inches; 43—45 mm.

Hab.—Colorado. Bruce (No. 138).

Specimens of this species are in several collections. It is related to *immanis* and *obliqua*, differing most obviously in the contrasting median space.

Hydœcia senilis n. sp.; first row, fourth figure.—Pale yellowish red, scarcely rusty, the median lines darker, the ordinary spots more yellow; secondaries paler, more yellow, more or less black powdered. Male antennæ ciliated. Expands 1.50—1.52 inches; 37—38 mm.

Hab.—Colorado. Bruce (No. 26 ♂, 206 ♀).

The insect belongs to the *nictitans*, *juvenilis* series, intermediate in color and larger than either. It has a strong superficial resemblance to *Pachnobia pectinata*.

Hydrœcia unimoda n. sp.; second row, 4th figure.—Dull powdery luteous, with a slight admixture of red; all the lines marked, but scarcely contrasting; a yellow apical patch and a similar, less distinct blotch at base of primaries; secondaries paler, powdery. Male antennæ ciliated. Expands 1.56 inches = 59 mm.

Hab.—Colorado. Bruce (No. 244) one ♂.

In wing form and type of maculation belongs to *rutila* series, with the prominent divided thoracic tuft of *nitela*.

Carneades conjuncta Smith; second row, 5th figure.—The species was described from New Mexico; the figured specimen is from Colorado. Bruce (No. 459).

Peridroma nigra n. sp.; middle row, lower figure.—The type of maculation is as in *occulta* and *astricta*, from which the new species differs by the powdery black fore wings, the markings picked out by whitish scales, and the white, black-powdered secondaries. Expands 2.12 inches; 53 mm.

Hab.—Colorado in September. Bruce (No. 462). A single female only.

Carneades n. sp.; second row, 7th figure.—This little species, belonging to the *messoria* group, though without doubt new, I prefer to leave unnamed, because it is defective and I have a single female only.

Caradrina meralis Morr.; first row, 7th figure.—A rather distinct little species which I have received from Mr. Bruce (Nos. 362, 440), and somewhat doubtfully labeled *meralis*.

Pleroma apposita n. sp.; second row, 1st figure.—Contrasting black and white, very different from *obliquata*, which is of a uniform ash-gray. The maculation is lost, except in the costal region, and the s. t. line only is marked by white scales the full distance. Expands 1.32 inches; 34 mm.

Hab.—Victoria, B. C. Mr. Neumoegen, one ♂ only.

Noctua flavotincta n. sp.; first row, 2nd figure.—Most nearly related to *oblata* Morr., but the collar is brown and the disc of thorax pale luteous gray in the new species, while in the described species the matter is reversed. The primaries a red-brown, the markings and costal region yellowish; claviform and cell between the ordinary spots black. Expands 1.32 inches; 34 mm.

Hab.—Victoria, B. C., collected by Mr. C. J. Weidt: two males, one of them with Mr. Neumoegen.

Calocampa brucei n. sp.; second row, 2nd figure.—Most nearly allied to some forms of *cineritia*, but differs in the paler, more ashen gray of the primaries, and most markedly by the pale thoracic disc, all other species having this much darker than the ground color of primaries. Expands 2 inches; 50 mm.

Hab.—Colorado. Bruce, ♂ and ♀.

I take pleasure in naming this fine species after its discoverer.

Rancora strigata n. gen. et sp.; first row, 1st figure.—An ally of *Cucullia*, differing from it in the heavier thorax, shorter body, improminent hood to collar, serrate antennæ of male and broader, less lanceolate wings. The color is ashen gray, the transverse markings are obsolete and the longitudinal dashes are obvious outwardly. Expands 1.75 inches; 44 mm.

Hab.—Victoria, B. C., one ♀; Mr. Neumoegen.

It is possible that *Cucullia serraticornis* may be congeric, but this species is larger, more robust, the wings broader, less lanceolate.

Notes on Bruchus alboscutellatus, Miarus hispidulus, Cœliodes acephalus, and a new Thiobius.

By John Hamilton, M. D., Allegheny, Pa.

Bruchus alboscutellatus Horn, breeds abundantly in the seed capsules of seed-box, Bastard Loosestrife, *Ludwigia alternifolia*, a perennial plant of the Onagraceæ family, which grows in wet places. The ripe capsule is coriaceous, with four-winged angles, perforated at the top, divided internally into four cells each containing a hundred or more seeds, and is about the size of a pea. Each cell usually contains a *Bruchus* in some stage, and if the larva eats the seeds the diminution in their number is not very great. As the dead plant stands rigid and its capsules indehiscent till Summer, and not eaten by birds or animals, it is quite probable the beetles remain in them all Winter, or even till the time the plant is in bloom. At this time, October 20th, the capsules contain larvæ, pupæ and beetles in about equal numbers.

This is a wide departure from the food-habits of any of the North American species of *Bruchus* on record,—*rufimanus*, *pisorum*, *chinensis*, *4-maculatus*, *desertorum*, *obscurus*, *obsoletus*, *Schrankiæ* and *aureolus*, are known to inhabit the seeds of leguminous plants. *Pruninus* occurs on the Ironwood of Arizona (family unknown to me), but whether it breeds in the fruit is not stated. It is quite likely other species of *Bruchus* may inhabit the seed vessels or succulent parts of other plants, especially of such as have persistent capsules or pods.

The dents on the hind femur of this species are usually three, a large basal, small median and moderate apical, well separated; sometimes the apical is absent, occasionally the apical and median; and sometimes the femur on one side will have the normal number, while the other will have only one or two, in which case the basal one is larger than usual.

Miarus hispidulus Lec.—Since Mr. Blanchard's statement, made two or three years ago, that this insect bred in the seed-pods of *Lobelia inflata*, no opportunity to examine this plant has been lost, but the results have been negative. However, on the 1st and on the 15th of October I found *L. syphilitica* (blue cardinal flower), a rank plant growing in wet places, the seed capsules or pods of which contained the larvæ, pupæ and beetles in great abundance. This species of *Lobelia* flowers in a progressively elongating raceme, each flower being in the axil of a leafy tract; flowering begins in July at the base of the raceme, advancing upwards till the plant is killed by frost, which here is sometimes late in October. Thus it happens that on the same raceme there may be at one time blossoms, green, ripe, and dehisced capsules. Whether the first capsules contained beetles cannot be asserted from knowledge, but this is probable, and that some of these are the parents of the larvæ and pupæ in the later developed pods is quite likely. The beetles seem to leave the pods for hibernation, or at least all which were in those kept in my office for observation did so through a round hole cut near the base, though in the field nothing of this was seen.

Cœliodes acephalus Say.—As is known, this species occurs in abundance during July on the evening primrose, *Oenothera biennis*, but no record of its breeding in the seed-pods has been observed. I discovered a female employed in the act of oviposition about the middle of July. A puncture had apparently been made by the beak, and the beetle turning round inserted an egg in the puncture which I obtained. No larvæ, pupæ, nor beetles were found in the capsules October 1st, from which it would appear pupation occurs in the earth. Was this oviposition accidental?

Thinobius sp.—Lovers of small things may be interested in knowing that an undescribed species of this genus may be found early in October in old leaves about decaying mushrooms. It has yellow antennæ and legs, and seems to differ from *T. flavicornis* Lec. by its smaller size, thorax rounded at base and the evident lustre of the thorax and elytra. The first joint of the antennæ is stout and long, the second as thick, but about one-third the length, the third is attenuate at base and longer than the apical width; the outer ones gradually enlarge, becoming transverse, and are setose with long stiff hairs. It is a graceful little thing, not over .02 inch. long, resembling much an *Aleocharid*, but the antennæ are not inserted on the front and are very conspicuous. I put more than a dozen into a collecting-bottle with other things, and only succeeded in getting two out of it,—a warning that the collector should always have something at hand for special things.

EREBIA SOFIA Streck.

By Dr. HERMAN STRECKER, Reading, Pa.

Having examined an example in Dr. Skinner's collection of the *Erebia* described in "Can. Ent." vol. xiii, p. 31, 1891, by Mr. W. H. Edwards as a new species under the name of *Erebia Ethela*, I find it to be identical with the above *E. sofia* described by myself in "Bull. Brook. Ent. Soc." p. 35, 1881; the type came from west coast of Hudson Bay, high up, was sent with large numbers of other Lepidoptera from the Episcopal Mission to Mr. W. Jeffcken by Archdeacon Kirtby, who sojourned in those inhospitable regions for over twenty years.

Mr. Edwards' types were, as he states, taken by Prof. Ed. T. Owen in the Yellowstone Park, Montana. It is not, however, as its author states "allied to *Erebia epipsodea*," but is exceedingly close to *E. Kefersteinii* Ev., a Siberian species.

The representation of the genus *Erebia* in our fauna is very meagre; all are, of course, confined to the Alpine and Arctic regions of the continent, the following are all so far known:

Disa Thub.—That *Rossi* Curt. and *fasciata* Butl. are but varieties of this species there seems to me to be but little doubt. I have received *fasciata* from Hudson Bay above Fort Churchill, also a single example through the goodness of Mr. Fletcher from Nepigon; this differs from the Polar examples, but not to a degree that would warrant specific separation.

Discoidalis Kby.—A beautiful and conspicuous species occurring from the Polar regions downwards in various parts of British America; also in East Siberia.

Epipsodea Butl.—A species peculiar to the Rocky Mountains of Colorado, etc.

Tyndarus Esp.—Found in the Rocky Mountains, and in the Alpine regions of various parts of Europe.

Magdalena Streck.—An almost unicolorous blackish species whose nearest ally would be the old world species *alecto* Hüb.

Haydenii W. H. Edw.—With this I am unacquainted.

Vesagus Dbldy.-Hew. is not an *Erebia*, nor even a North American insect, but is a South American species belonging to the genus *Lymanopoda*.

COLLECTING IN THE FAR NORTH.—Part I.

II. THE STIKINE RIVER.

By H. F. Wickham, Iowa City, Iowa.

The Stikine River is one of the largest of the streams flowing into the Pacific through our Alaskan territory. It is of sufficient size to permit of navigation by steamers of three and one-half to four feet draught, and with powerful engines, from the mouth to Glenora, and occasionally to Telegraph Creek, twelve miles further on, a total distance of about 138 miles. A little above this point is the "Great Cañon," where the current is too swift and the water too rough for the passage even of canoes in the skillful hands of native Indians.*

Leaving Fort Wrangel at high tide, early on the morning of the 11th of July, we were soon over the bar which stretches across the mouth of the river; just here the current is not very swift, but on ascending a little distance it becomes apparent that the engines are being worked to nearly their full capacity in order to make any headway. At our first stop, made for the purpose of taking wood aboard, I got out and tried to find some insects, but with the exception of a few *Bembidium quadrifoveolatum*, taken from beneath the bottom logs in the wood-pile, nothing of the sort was visible—always leaving out of account the mosquitoes, midges and Tabanidæ, which, on the contrary, were seldom absent. The undergrowth here was too thick to penetrate without an axe, and, even had there been time to cut a patch through the bushes, the fallen timber presented an almost impassable barrier to progress. That afternoon we passed the international boundary and left Alaska for British Columbia.

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* See Annual Report of the Geological and Nat. Hist. Survey of Canada, new series, Vol. III, Part I, 1888. The reader is referred to Report B,—"On an exploration in the Yukon District, N. W. T. and adjacent northern portion of British Columbia" by George M. Dawson, D.S., F.G.S., for further information regarding geography and history. The writer acknowledges his indebtedness to this Report in determining distances traveled.

The freshet here had overflowed most of the bottom lands and the insects were crowded up into the few dry places left, and therefore easily taken, as I found on making a search among the dead leaves and rubbish among the cottonwood trees. A fine example of *Cychrus angusticollis* Fisch. occurred here, the farthest from the coast that I have ever seen it—perhaps another proof of Dr. Dawson's theory that this cañon marks nearly the head of the old salt water inlet that has been silted up, as this *Cychrus* has always been considered as strictly a coast species. A black variety of *C. marginatus* was also found, with *Elaphrus pallipes*, *Nebria metallica*, *Bembidium quadrifoveolatum* and *Platynus piceolus*. Of *Pterostichus* the most common species was *riparius*, but in comparing with it a few *vitreus* and *luczotii* were taken. Nearly all these were found under sticks and leaves in little hollows, and besides the Carabidæ mentioned I got a few other nice things—an *Anistoma*, probably *lateritia*, two or three *Agathidium revolveus*, *Tachinus nigricornis* in numbers, and rarely an *Ægialia cylindrica* or *rufescens*. On a sand bank a few specimens of *Cicindela Oregona* were flying about and were added to my captures; dead wood and fungi yielded some good things, as, for example, *Colitys scabra*, *Tharops ruficornis* and *Phellopsis obcordata;* while occasionally something nice would be found flying about the camp, as in the case of *Elater Behrensii*, *Corymbites angularis*, *Leptalia macilenta* and *Cephaloon lepturides*, *Creophilus villosus* was attracted by the smell of meat, so was *Silpha lapponica*, the latter species going by the name of "Salmon-bug" up there, and is said to do a great deal of damage to fish put out for curing by the natives.

A NEW ARCTIA.

By Annie Trumbull Slosson, New York, N. Y.

Arctia minea n. sp.

This moth, from its general form and style of ornamentation, seems closely allied to *arge*. But it is a much larger, more robust insect, and in its coloring quite distinct.

Thorax, abdomen, markings of primaries and entire surface of secondaries, a vivid, a peculiar shade of yellowish red. Background of primaries black, markings broad and distinct; costal and inner margins broadly red. The zigzag lines of outer margin, which, in *figurata*, with its forms of *celia*, *phyllira*, etc., make a *W* or *B*, take in this species the *X*-like shape so noticeable in *arge* and *dione*. The veins are marked with red, and there is one broad, heavy band of the same vivid color running from base to outer margin, curving in its course, and touching anal angle; secondaries an even tint of yellow-red, with large, black, irregular maculations. Underneath, the costa is marked with fiery orange decoration as on upper side, but in deeper, brighter color. Abdomen with dorsal and lateral rows of black spots.

The characteristic markings of this genus are in some respects so similar in the different species that it is exceedingly difficult to make a description distinctive, and I know I have failed here. But this insect is so striking and peculiar, its fiery tones differ so markedly from the pallid tints of its nearest ally, while its decoration and general habitus are so unlike other groups in the genus that I cannot doubt its right to a specific name.

Described from one male and two females taken at light in Franconia, N. H., in 1889, 1890 and 1892.

———o———

DESCRIPTION OF A NEW COSSID FROM TEXAS.

By B. NEUMOEGEN, New York.

AON nov. gen.

Head small, eyes large, palpi prominent, prothorax and thorax slender, tufted. Antennæ simply pectinated, slightly tapering off near tip. Primaries, costa straight, apices sharp and pointed; anterior margin well rounded, especially at angle. Inner margin straight. Wings about two and a half times longer than broad. Secondaries, costa straight, margins well rounded, tuft along anal margin. Wings about as broad as long. Body very long and slender, sparsely covered with hair, but with a pronounced anal tuft. Legs slender and pilose; tibiæ free from hair, with minimal claws; venation much the same as in *Hypopta* Hüb.

Aon noctuiformis nov. spec.—Antennæ and palpi brown; eyes black. Head and prothorax yellowish brown, encircled by a black line. Thorax gray, with yellow dust along centre. Body gray, with blackish anal tuft. Above: Primaries light gray, strewn with black granules. A prominent black discal and two black basal spots; costa blackish, with small gray dots. A transverse series of small, irregular black blotches from near apex to median space. Light green tints along anterior margin from subcostal to median veins; a blackish hue transversing basal part of intercellular and median areas. Fringes dark gray, with black accentuation at veins; a dark shade along interior margin. Secondaries uniformly grayish white with black marginal tints as far as anal angle; a faint dark gray discal dot. Below: Primaries dark gray with whitish shades from basal area to anterior margin; black tints from base along costa; discal dot not as prominent as above. Secondaries grayish white, powdered with black along costa; prominent black discal dots. Legs covered with light gray hair; tibiæ black, with white spots at joints. Abdomen light gray, with a sparse covering of hair. Expanse of wings 29 mm. Length of body 10 mm.

Hab.—Nueces River, S. W. Texas. Types, two males; coll. B. Neumoegen.

Female unknown so far.

A very interesting and rare Cossid, the smallest of our fauna. It comes close to *Hypopta* Hüb., but is a smaller, more slenderly-built insect with primaries as well drawn out as in *Holcocerus* Staud. It resembles, superficially, a noctuid.

"MR. ALBARDA'S COLLECTION OF PALÆARCTIC NEUROPTERA.—It was with great regret I heard some time since from my valued friend and correspondent, Mr. H. Albarda, of Leeuwarden, that failing eyesight had caused him to abandon Entomology. His rich and representative collection of Palæarctic Neuroptera was offered by him to the Leyden Museum on condition that it be kept separate and not incorporated in the general collection, and the offer has been eagerly accepted by the authorities. At the same time the Dutch Entomological Society received the donation of such books and pamphlets from his library as the Society did not already possess.—R. McLachlan, Lewisham, London: October, 1892" (Ent. Mo. Mag. November, 1892, p. 290). Mr. Albarda recently published an excellent paper on the family Rhaphididæ, in the "Tijdschrift voor Entomologie," noticed in the Literature Dep't of the NEWS for November.

STRENGTH OF THE ANT.—As I was recently walking along a rough brick pavement, I noticed a small ant dragging the dead body of a large house-fly across the walk. During the few minutes that I was watching, it pulled the fly two or three feet to the edge of the pavement and then up a bank of rough earth, which had an inclination of at least fifteen degrees, for a distance of six or more inches, when I caught the ant with its burden in an envelope and took them to the laboratory to measure and weigh them. The outside measures of the ant were 1 x 4 millimeters, and its weight was 1.4 milligrams; that of the fly 4.5 x 12 millimeters, and its weight 36.3 milligrams (these weighings were made upon a fine analytical balance). So we note that the ant was dragging up a steep hill a body of over twenty-five times its own weight, and apparently not specially fatigued thereby.—F. P. DUNNINGTON, in "Popular Science News."

ENTOMOLOGICAL NEWS.

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Philadelphia, Pa., December, 1892.

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DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

Elaphidion Injury.—One of the striking features noticeable now in riding through the State of New Jersey is the unusual amount of *Elaphidion* injury on oaks. In some localities every tree has several dead or dying twigs, and the ground beneath is strewn with small branches broken off by recent high winds. Some of these twigs contain two, or even three larvæ at short intervals, while there is only one girdling. This seems to indicate that not all the larvæ have the girdling habit. I have bred the species from young oak stems, where no attempt at girdling was ever made. As the species of *Elaphidion* sometimes attack orchard trees, it behooves the agriculturist to collect and burn all fallen oak twigs and branches, during the Winter, where the oaks are near the orchards. All shade and ornamental trees should be so protected at any rate, even when there is no threatened orchard near.

The "Angoumois Grain Moth," of which mention was made last month in comment on Dr. Doran's Bulletin, promises to be more injurious than ever before, during the present season. I have received letters from several parts of New Jersey and Pennsylvania complaining of injury to corn as well as wheat, and most of the letters speak of the large number of "millers" now flying. Wherever this is the case, wheat should be threshed immediately, and either at once disposed of or bulked in tight bins and covered with sacking or some more closely woven substance. Infested corn-cribs are difficult to deal with. If the crib is tight, the carbon disulphide remedy can be used; if it is open work, it is probable that there will be no further breeding of the insects in it this season. The frosty nights will check development, and injury will not increase. As a precaution, cribs containing old corn which is infested, should be cleaned and fumigated with sulphur to destroy lurking moths, before the new corn is stored in it.

Oviposition of Crickets.—Among the insects most common on cranberry bogs about picking time, are the crickets, and they are charged by the growers with eating berries, and thus doing considerable injury. The question of just where they oviposit becomes an important one, when we consider the possibility of keeping the insects off the bog, and I sent two of my students, October 13th, to make observations. They were very successful, brought back a quantity of eggs, and the following account is from the report made by Mr. R. S. Lull.

They seemed to prefer dry, sandy ground, and were found in great numbers on the tops of the dams crossing the bogs. But one or two were noticed on peaty ground, and on digging there, could find no trace of eggs so abundant in the sand. Most of the specimens were females, but occasionally a male would be seen, burrowing like the rest, or with his head hidden in the little cavity he had made, he would sing away, possibly to cheer his mate. The females were very busy burrowing, throwing out the sand with considerable force with their strong fore legs; sometimes they dug singly, but often two or three together, preferring some sort of shelter as of a small tuft of grass. Others were busy egg laying, with the long ovipositor thrust deep into the sand, sometimes nowhere near a burrow. Occasionally it seemed as though a burrow had been made, the eggs deposited, and the little cavity filled up again, as in several places where eggs were found, the ground had that loose, freshly-dug appearance.

Carefully scraping away the soil disclosed the eggs, quite near the surface, sometimes only three or four lying together, again a dozen or more. No trace of cell or egg-case was found, although the eggs adhered together more or less. In some of the burrows and on the surface a larva was found, evidently of some predacious beetle, which fed upon the eggs. From the fact that the crickets only oviposit in dry soil, it is suggested that wetting down the bogs, and if possible the dams as well, about the middle of October, might prevent breeding there.

The larva brought in is Carabid, but I have not attempted to fix the genus.

The Horn Fly Again.—In the "Industrialist," for October 8th, Prof. E. A. Popenoe records the appearance of this insect in Kansas during the present year. The rapidity with which it has spread is simply marvelous. First noticed in 1886, it has in six years overrun almost one-half of our territory, extending north and south from Florida to Quebec, and west to Kansas. The conclusion that the railroad lines have been largely instrumental in spreading the insect would be almost irresistable were it not that the shipment of cattle moves rather from west to east. Unlike *Stomoxys calcitrans* this species does not seem to bother horses.

The Strawberry Weevil.—In Bulletin No. xviii, of the Delaware College Experiment Station, Mr. M. H. Beckwith gives us an account of injury done by *Anthonomus musculus* to strawberries in Kent County, Delaware. He has found the larvæ in the injured buds and has bred the beetle June 10th. These beetles mated; but refused to oviposit on potted strawberry plants. They have been found in the field as late as September, and Mr. Beckwith suggests that there are probably two, and possibly three broods during the season, but he is unable to give us any information as to another food-plant, or the method of hibernation. Collectors of Coleoptera have taken this species at almost all times during the season, but I am not aware that any food-plants have been recorded. It is one of those interesting forms that without apparent reason increases surprisingly for one or two years, does a great amount of injury and then drops back into obscurity for a longer or shorter time. Our successors in the next century will undoubtedly look back with wonder at the ignorance and stupidity of the students of the present day who failed to see the (to them) perfectly clear relation between the effect and the cause, but it is as undoubtedly true that no reasonable explanation of the fact has been advanced. Mr. Beckwith has made no experiments, but recommends kerosene emulsion and hellebore, expressly discountenancing the use of the arsenites on the score of danger to the consumer. This makes possible an interesting comparison with Bulletin 18 of the Iowa Station noted in our last number, in which a free use of the arsenites even upon well grown fruit is advocated. Personally, I fail to see any danger in their application while in bud or in blossom, and it is at this time that the applications against the "weevil" must be made. I very much doubt the efficiency of the hellebore mixture. One ounce to three gallons of water may do for currant worms, or the saw-fly larvæ generally, but it will not be found effective for much besides. The snout beetles are usually difficult to kill at best, and where the feeding is done by puncturing the bud and eating the undeveloped petals anything short of the arsenites is practically useless, and I would not expect too much of even these. The kerosene suggestion is, in my opinion, the one most likely to be useful.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

[The Conductors of ENTOMOLOGICAL NEWS solicit, and will thankfully receive items of news, likely to interest its readers, from any source. The author's name will be given in each case for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Owing to low subscription rate, "extras" will be charged for, and when they are wanted, it should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

THE newspaper clipping referring to donation of the Angus collection to American Museum of Natural History of New York, which appeared on page 97, vol. iii, of ENT. NEWS, was not written by me, as I furnished only the last sentence concerning Catocalæ.—Dr. R. E. KUNZE.

LIEUT. R. E. PEARY, the Arctic explorer, saw bumble-bees at north latitude 81° 37′ in Greenland, and stated that blue-bottle flies were as common that far north as they are in Philadelphia around a butcher-shop. The latitude mentioned is within about 580 miles of the North Pole.

NOTE ON TACHYTES.—In connection with the recent monograph of the North American species of *Tachytes* by Mr. Fox, in Transactions Entomological Society xix, I want to say that I have confirmed Mr. Cresson's suspicion that *T. elongatus* Cr. might be the male of *T. distinctus* Sm. by taking them in copula. In Illinois I have also taken *T. validus* (common), *T. aurulentus*, *T. sericatus* and *T. obscurus*.—CHAS. ROBERTSON, Carlinville, Ill.

Venturesome Insects.—Mr. Webster's note in the News for November, p. 232, on the behavior of *Pyrameis atalanta*, recalls the fact that I made the same observation at Wallingford, Delaware County, Pa., in 1881 and 1882. Late in sunny Summer afternoons, about 5.30 o'clock, or even later, one or sometimes more individuals of *P. atalanta* appeared day after day, at nearly the same spot in an orchard lawn. Sometimes they alighted upon persons, more often upon the trees or the ground. I have noticed the same phenomena in this species in later years, but cannot now specify the times and places. Among dragonflies, the only similar occurrence that I can now recall, is that of some males of *Plathemis trimaculata* repeatedly alighting upon my gray flannel shirt, late one afternoon, while I was watching them in a clearing in the woods at Folsom, Pa. The bluish white color of their abdomens at first suggested that their alighting upon my shirt was an instance of protective resemblance, but I doubt that such was the case.--Philip P. Calvert.

To Dr. Robert H. Lamborn, the public is indebted for an effort made a few years since toward discovering a method for exterminating mosquitoes. Although many months of research and experiment resulted in no apparent abatement of the nuisance, still it is not improbable that the future may bring to the notice of entomologists some predatory insect which may be utilized as a mosquito annihilator. The higher development of useful domestic insects has long been the study of agriculturists, and has been as important a factor in economics as the limitless effort to resist the noxious parasite.

Among the many insects indispensable to man are the cochineal bug, the silk worm and the honey bee; to the latter Dr. Lamborn's attention has recently turned, doubtless with a view to bringing about the advent of the much-talked-of "Coming Bee."

Although apiculture is the oldest economic pursuit, it is only within the last century that much scientific thought has been directed to the perfection of the stock. Much has been accomplished in the line of developing a gentler bee, but at the expense of other qualities. To evolve an ideal bee some points must be considered which have hitherto been overlooked. A combination of desirable points of various races and an elimination of objections must require much patience, time and money.

Carrie B. Aaron.

A change in the Name of a Recently-described Species of Orchelimum.—Recently, while examining a small collection of New Jersey Orthoptera which had been sent to me by Prof. John B. Smith, of the New Jersey Agricultural Experiment Station, for determination, a pair of small *Orchelimum* were encountered which agree in every respect with Harris' description and figure of *Orchelimum gracilis* as given in "Insects Injurious to Vegetation," edition of 1863, p. 163, fig. 78. By referring to "Materials for a Monograph of the Orthoptera of N. America" by Samuel H. Scudder, it will be seen that on page 451 this insect of Harris' is made a synonym of De Geer's *Locusta fasciata*, which is the

Xiphidium fasciatum of Serville and later writers. It is quite possible that Mr. Scudder did not have typical specimens of the insect in question at hand when he was working over the material upon which he based his decision of the synonymy of names. At any rate the two insects are quite distinct, as the specimens before me very plainly indicate, and therefore Harris' name should be restored to the insect which originally bore it.

In this connection it might be well for me to go a little further and correct an error which I fell into by accepting this synonymy as made out by the author referred to above. In an article published in the "Canadian Entomologist" for April, 1891, on page 70, I described as new a species of *Orchelimum* from Nebraska, for which I chose the name *gracile*. Now, that this name has been ascertained to rightfully belong to another species of the genus, my insect's name will necessarily have to be changed. I therefore suggest for it the name *delicatum*, suggestive of its general delicate structure and appearance.

In my article above referred to I have also unintentionally allowed the name *lanceolatum* to appear where that of *attenuatum* should have been used instead. This error occurred on account of my having described one of Mr. Scudder's species as new under this name, but afterwards found out my error in time to make the correction in the paper where the description occurs before it was printed, but did not do so in the notes which follow.—LAWRENCE BRUNER, Nebraska State University.

Identification of Insects (Imagos) for Subscribers.

Specimens will be named under the following conditions: 1st, The number of specimens to be unlimited for each sending; 2d, The sender to pay all expenses of transportation and the insects to become the property of the American Entomological Society; 3d. Each specimen must have a number attached so that the identification may be announced accordingly. Exotic species named only by special arrangement with the Editor, who should be consulted before specimens are sent. Send a 2 cent stamp with all insects for return of names. **Before sending insects for identification, read page 41, Vol. III.** Address all packages to ENTOMOLOGICAL NEWS, Academy Natural Sciences, Logan Square, Philadelphia, Pa.

Entomological Literature.

BULLETIN OF THE AMERICAN MUSEUM OF NATURAL HISTORY, iv, pp. 167, *et seq.*, New York, 1892.—List of types of Lepidoptera in the [Henry] Edwards Collection of Insects [now in this Museum,] W. Beutenmüller.

BULLETINO DELLA SOCIETA ENTOMOLOGICA ITALIANA, xxiv, 2, Florence, Sept. 15, 1892.—Contributions to the dipterological fauna of the province of Pavia, II, M. Bezzi. Contributions to the study of the Brenthidæ,*† xii, A. Senna. On grasshoppers in the low Florentine plain. *Aonidia Blanchardi* n. sp. of Coccidæ from the date palm of the Sahara, A. Targioni Tozzetti, figs.

THE ENTOMOLOGIST'S RECORD, London, Oct. 15, 1892.—The genus *Acronycta* and its allies (cont.), Dr. T. A. Chapman. A melanic race of *Liparis monacha*, J. A. Clark, 1 pl. Variation in size brought about by food, E. A. Bowles.

THE JOURNAL OF COMPARATIVE NEUROLOGY, II, pp. 89–136, Granville, Ohio, September, 1892.—Psychological notes upon the Gallery Spider—Illustrations of intelligent variations in the construction of the web, C. H. Turner.

OFVERSIGT AF FINSKA VETENSKAPS-SOCIETETENS FORHANDLINGAR, xxxiii, Helsingfors, 1891. [On Siberian Hemiptera-Heteroptera],* O. M. Reuter; has some comparisons of N. American and other faunas.

LE NATURALISTE, Paris, Oct. 15, 1892.—The mouth and the buccal organs of Arthropods (concl.), R. Saint-Loup. The useful insects of China, Tcheng-Ki-Tong.

JAHRES-BERICHT DER NATURFORSCHENDEN GESELLSCHAFT GRAUBUENSDENS, n. f. xxxv, Chur, 1892. On the formation of honey, Dr. A. v. Planta.

DEUTSCHE ENTOMOLOGISCHE ZEITSCHRIFT, 1892, 1, Berlin, August, 1892.—On the law of moderation in the alteration of the markings of insects: Contribution to the theory of development from constitutional causes, K. Escherich, 1 pl. The Anchonid group,*† J. Faust. [On Coleoptara from Turkestan, Siberia, Persia and the Amur River]*† Dr. L. v. Heyden and J. Weise. [On Cicindelidæ]*† W. Horn. The varieties of *Dorcadion equestre* Laxman, Dr. G. Kratze, 1 pl. Monographic revision of the Rutelid genus *Popillia* Serv., id. VII. Contribution to the German beetle fauna, J. Schilsky. Revision of the palæarctic species of the Elaterid genus *Melanotus* Eschsch., O. Schwarz, 1 pl.

ANNALES DES SCIENCES NATURELLES. ZOOLOGIE, xiii, 6, Paris, Oct. 5, 1892.—Anatomical and physiological researches on the compound eye of Arthropods, H. Viallanes, 2 pls.

ZEITSCHRIFT FUR WISSENSCHAFTLICHE ZOOLOGIE, liv, 4, Leipsic, Oct. 18, 1892.—Contributions to the knowledge of the wings of insects, C. Hoffbauer, 2 pls., figs.

THE OTTAWA NATURALIST, November, 1892.—*Calosoma scrutator* at Ottawa, J. Fletcher.

ANIMAL COLORATION.—An account of the Principal Facts and Theories relating to the Colours and Markings of Animals, by Frank E. Beddard, M.A., etc. With four coloured plates; and woodcuts in the text. London: Swan Sonnenschein & Co. New York: Macmillan & Co., 1892, pp. viii, 288. "I have not used insects so much as has Mr. Poulton. . . . Nevertheless, it is impossible not to devote a great deal of space to insects.

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* Contains new species other than North American. † Contains new genera.

The theory of mimicry, for instance, is almost entirely supported by evidence furnished from that group." Preface, p. iv.

THE ENTOMOLOGIST'S MONTHLY MAGAZINE, London, November, 1892.—Notes on some British and exotic Coccidæ, J. W. Douglas; figs. etc.

ANNALES DE LA SOCIETE ENTOMOLOGIQUE DE FRANCE, lx, Paris, 1e Trimestre, Sept. 22, 1891.—Voyage of M. E. Simon to Venezuela, December, 1887–April, 1888; eleventh memoir: Biological observations on Arachnids,*† E. Simon, 4 pls. Essay on the classification of the Pyralites (concl. in 4e Tr.)*† E. L. Ragonot. Malachidæ of Europe and neighboring countries (cont. in 2e and 3e Tr.), E. Abeille de Perrin, etc.—2e and 3e Trimestres, Dec. 23, 1891.—Voyage of E. Simon to Venezuela; 13th memoir: Elateridæ,* E. Fletiaux; 14th: Nitidulidæ, Monotomidæ,* A. Grouvelle, figs.; 16th: Pseudoscorpions* (concl. in 4e Tr. with 4 pls.), L. Balzan, 4 pls. Voyage of M. E. Gounelle to Brazil: Eumolpidæ,* E. Lefevre. Arachnological studies, 23d memoir,* E. Simon. Critical examination of some types of Curculionidæ of the genus *Apion* belonging to the Musée at Stockholm, followed by synonymical notes, J. Desbrochers des Loges. Studies on the geographical distribution of the Malacoderma, J. Bourgeois, map. Habits and metamorphoses of *Perilitus brevicollis* Haliday, Braconid Hymenopter, parasitic on the Altise (*Haltica ampelophaga* Guer.) of the vine in Algeria, J. K. d'Herculais and C. Langlois.—4e Trimestre, April 13, 1892. Monographic essay on the family Gyrinidæ, 2d supplement, Dr. M. Regimbart, 2 pls. Bulletin: Two bird destroyers of Odonata, R. Martin.

MEMOIRES DE LA SOCIETE ZOOLOGIQUE DE FRANCE, v, 4, Paris, 1892.—Descriptions of new Diptera,* J. M. F. Bigot.

VERHANDLUNGEN DER K. K. ZOOL.-BOT. GESELLSCHAFT IN WIEN, xlii, 1, April, 1892. On the so-called stand-still stage in the development of Oestrid larvæ, Dr. F. Brauer. Communications on Gall-flies,* E. H. Ruebsaamen, 2 pls. 13 figs.—2, August, 1892. The biological significance of the genital appendages of insects, C. Escherich, 1 pl. Monographic revision of the Mecopodidæ, J. Redtenbacher, 1 pl.

COMPTE RENDU. L'ACADEMIE DES SCIENCES, Paris, Oct. 24, 1892. On the mode of fixation of the parasitic hexapod larvæ of Acarina, S. Jourdain.

ARCHIV FUR NATURGESCHICHTE, lviii, I, 3, Berlin, September, 1892.—The beak of the Diptera Pupipara, F. H. Mueggenburg, 2 pls.

NATURE, London, Oct. 27, 1892.—A wave of wasp life, G. W. Peckham. Protective mimicry [in Locustina], R. H. Thomas.

THE ENTOMOLOGIST, London, Nov'r, 1892.—Notes on the synonymy of Noctuid moths, A. G. Butler.

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* Contains new species other than North American. † Contains new genera.

THE BRITISH NATURALIST, London, November, 1892.—The secondary sexual characters of the British Coleoptera, J. W. Ellis. Portrait and sketch of Rev. O. P. Cambridge.

THE CANADIAN ENTOMOLOGIST, London, Ont., November, 1892.—Honey Bee or House Fly, H. Osborn. The life-history of the northern mole-cricket (*Gryllotalpa borealis*), E. W. Doran. Note on a borer in the stem of the Red Currant, E. W. Claypole. Report of Committee on an Entomological Congress in 1893. Notes on the insect fauna of the Mississippi bottoms, H. E. Weed. The web-worm tiger (*Plochionus timidus* Hald.), M. E. Murtfeldt. [The preceding were read to the Entomological Club, A. A. A. S. at Rochester, August, 1892]. *Galeruca xanthomelæna* polygoneutic at Washington, C. V. Riley. On *Desmodex folliculorum* var. *bovis* in American cattle, C. W. Stiles. On the Bean Weevil, C. V. Riley.

NEW SPECIES OF NORTH AMERICAN INSECTS DESCRIBED IN THE PRECEDING LITERATURE.

COLEOPTERA.

Anchonidæ: n. sp. from Mexico and Central America; Faust, Deut. Ent. Zeit. 1892, pp. 17–60.

Omus Hornianus, W. Horn, Deut. Ent. Zeit. 1892, p. 91, Calif.?

Argodia n. gen. Lamiidæ, Belon, Bull. Ent. Soc. France, 1891, p. liv. *A. Grouvellei* id., Mex.

ARACHNIDA.

Cyrtauchenius talpa Simon, Ann. Soc. Ent. France, 1891, p. 303, Calif. *Brachythele longitarsis* p. 305, S. Calif. *B. Theveneti*, p. 305, Calif.

DIPTERA.

New species of *Chrysops*, *Corisoneura*, *Diatomineura*, *Diachlorus*, *Stibasoma*, *Therioplectes*, *Atylotus*, *Tabanus*, Bigot, Mem. Soc. Zool. France, v., pp. 603–688.

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